COAL AGE

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Another Scrap of Paper

HAVING agreed to disagree, representatives of the union and the operators in the Central Competitive field have gone home after several fruitless days at the Cleveland conference. In some way the idea has been fostered that the union had a real grievance in that the Bituminous Coal Commission had permitted an "obvious inequality" to creep into its award last winter. The commission is guilty of no such thing The increases awarded daymen and tonnage workers were carefully considered and the daymen were given a lesser percentage than the tonnage men because that was justice as the commission saw it. Because they did not get what they wanted the United Mine Workers have scrapped their contract.

The Robinson commission gave daymen an advance of $1 per day, or 20 per cent—a total increase over 1913 of 111 per cent, which the commission noted was greater than any estimates of the increase in the cost of living in the same period. The raise given tonnage workers last March was 31 per cent, or 88 per cent over the average 1913 rate. To these advances the mine workers agreed, although their representative on the commission, Mr. White, did not concur and in his minority report asked for $1.35 per day or 31 per cent increase for daymen over 1919.

Secretary Wilson would have settled the matter last fall by an increase of 31.61 per cent, because that advance would have raised tonnage men to the level reached by the cost of living. And when tonnage men eventually are given an increase by that amount and daymen but 20 per cent the daymen come back for more. A year ago it was tonnage men who started trouble because they had received but 40 per cent increase since 1916, whereas daymen had gained 76 per cent.

The average earnings of outside daymen in Illinois and Indiana are now a trifle over $6 per day and for inside labor about $5.85, if we add $1 to their earnings as reported for the first ten months of 1919. Loaders, paid by the ton, who last year averaged around $7 per day, now realize more than $9. Although the dayman can earn about 60 per cent as much pay as the tonnage man his greater opportunity to work the year around assures him monthly and yearly earnings up to 80 per cent of the piece workers.

Priority of Coal Should Be Continued

DIFFERENCE of opinion there may be on the question of whether the country will suffer from a coal shortage next winter, but the subject has now been narrowed down to a question of whether production in the next few months will be increased sufficiently to allay the fears of the consumer. The stage is set for a winter of coal shortage and frenzied prices. We believe even George Cushing will agree to this. There will be no shortage, however, if the buying public can be calmed and production maintains its upward trend.

Mr. Cushing will say that he was right all the time if the deficit in stocks is overcome this fall, as we are hopeful it will be. And if this comes about he will have been right—but only because others understood the situation in its true perspective and adopted measures to meet it. Statistics recently published by the Geological Survey and summarized in the following pages of this issue of *Coal Age* demonstrate the wisdom of the course consistently followed by the National Coal Association and to which American railroad executives and the Interstate Commerce Commission were early won. Those who opposed the open-top car priority orders should recognize now the wisdom of this measure so far and the necessity of its maintenance until the situation is rectified. Doubtless the policy of holding open-top cars solely for the use of coal has interfered with new construction and road building, which is to be regretted, of course. However, we cannot picture the country in a frenzy over lack of houses and roads at all comparable with the public uproar over coal shortage. In some way we can postpone some things, but not the use of coal.

England Preparing for Coal Strike

ADVICES from England are that the British Government is anticipating the possibility of a strike of coal miners in the near future. During the last few months every attention has been given to the accumulation of reserves of coal in the hands of consumers in the British Isles, a policy made particularly evident when in the first weeks of June exports from Great Britain were severely curtailed. It is reported that the stocks of coal are now sufficient to carry on necessary public service for a considerable time, perhaps longer than the funds of the various mine labor associations would enable them to pay double pre-war rates of strike pay. Railway companies are said to be particularly well stocked with coal, as are likewise gas and other public utilities.

Probably, as in the case of the strike in this country last autumn, there will be advance notice of the miners' intention of at least several weeks' which will enable the further accumulation of stocks. It has even been suggested that exports be absolutely embargoed for a short time to insure ample home supplies. The strike by the miners is expected as a result of the refusal of the British Government to accede to the coal miners' demands which specifically call for an increase in pay of 2s. per day and a decrease of 14s. 2d. in the price of coal sold for household use. It will be recalled that early in June the British Government increased the price of household coal by that amount, having arbitrarily held down the price previously. The miners are set upon more money for themselves and less profit for

the producers. Their program appears to be to reduce the profit of all coal producers and, if necessary, compel those who operate at a profit to share with those who operate at a loss—in other words nationalize the mines.

Labor is after a larger and larger share of the profits of industry. The coal miners of Illinois struck recently not so much because their wage was insufficient as because they want a larger share of the profit the coal operator is getting from coal at the prices prevalent today. Evidence of this is found in their reiterated statements regarding the large earnings of the operators and the small share the laborer receives.

Mr. Dunn and the Railroad Situation

IN HIS paper on "The Railroad Situation—Causes and Remedies," in this issue of *Coal Age* Mr. Dunn, editor of *Railway Age*, has treated the subject more simply and to better effect than has anyone else to our knowledge. A year ago Mr. Hines made an admirable presentation before the Frelinghuysen committee and Mr. Willard did himself justice before the Interstate Commerce Commission recently, but Mr. Dunn in this paper has told the story for the railroads in a way that no railroad man has done. His principal point is that with 5-per cent increase in equipment and facilities with which to do business the railroads since 1915 have averaged 45-per cent greater performance. Truly a remarkable record.

Mr. Dunn concludes that this demonstrates beyond doubt that the roads have been efficienctly managed. He points out as a matter of common knowledge that the roads have not been able to increase facilities in the years from 1915 to date because denied sufficient revenue. While a vast expansion of industry was in progress in this country the carriers were obliged to stand still—the country is paying the price for this neglect now. He points to the coal industry as one of those that experienced a large expansion due to large profits offered in the last few years. He erroneously quotes the Geological Survey as giving the bituminous coal mines of the country a total rating of 900,000,000 tons or more per year, an opinion we find others seem to hold and one we intend to discuss later.

Mr. Dunn appears to deplore the fact that there "seems to be a general impression that the railways within recent months and especially since they were returned to private ownership on March 1 have been seriously 'falling down' and that the amount of traffic handled has been substantially less than in past years." He states that in spite of the railway employees' strikes the carriers handled 20 per cent more traffic in the first five months of this year than in the same months of 1920 and substantially the same as in 1918. We are grateful to Mr. Dunn for these figures, for they explain a lot. With 20 per cent more total freight carried this year than last and bituminous coal increased but 17 per cent over the same period, it is evident that soft coal has not had its share of the increase—not from lack of demand, however. Furthermore, whereas total freight carried this year is substantially the same as in 1918, bituminous coal carried has been less by 36,000,000 tons.

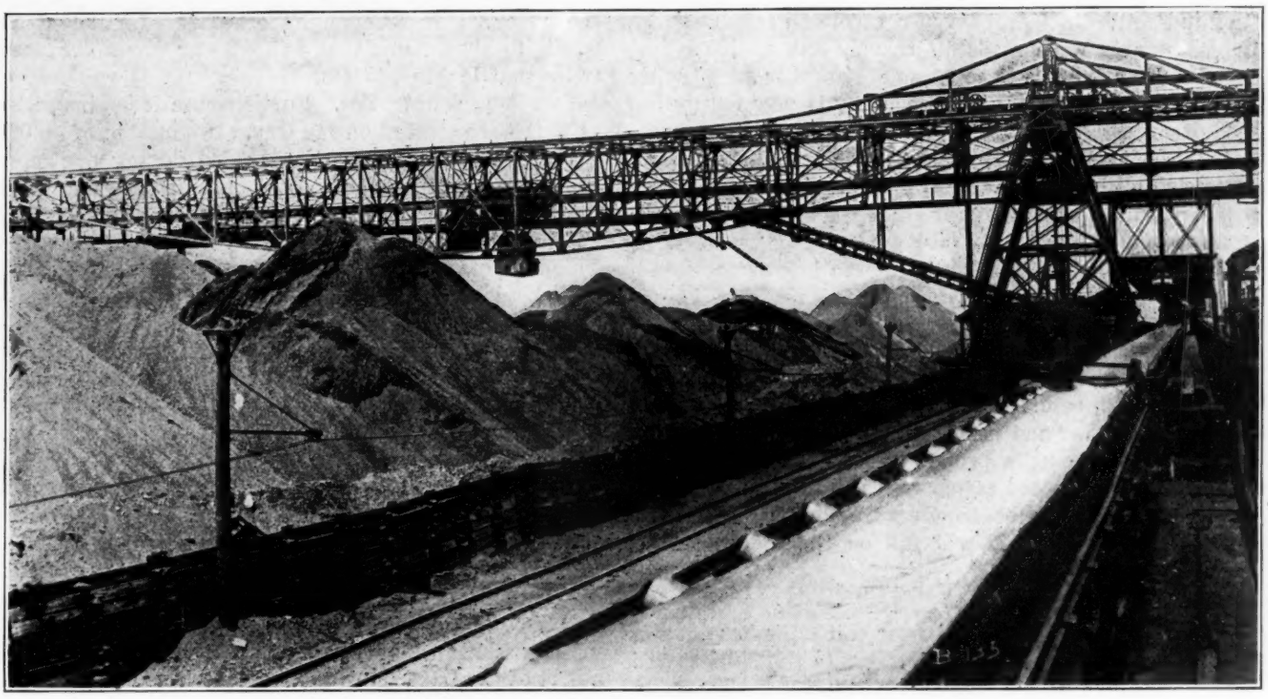
Consider the significance of this statement. To move this substantially equal volume of freight required substantially the same quantity of engine coal and to produce the goods that were carried there must certainly have been consumed substantially the same quantity of coal. But the production of coal has been 36,000,000 tons less, coupled with which is the fact that something over 40,000,000 tons of production was lost to the country by the miners' strike last fall and we had a severe winter. If these things be true, is it any wonder we are experiencing a coal shortage, that the Interstate Commerce Commission has ordered that coal be given preference in the use of open-top cars, and that a continuance of that order has been granted?

That the coal shortage is mainly attributable to other things than the railroad situation is contended by Mr. Dunn, who traces the causes back to the early months of 1919, when there was a large surplus of coal cars and the railroads "Carried on a vigorous agitation to secure a larger production and transportation of coal, but consumers and dealers would not buy it in larger amounts." Coal operators need not be reminded of the battle over prices with the railroads last spring and how that fight did anything but promote buying of coal. He adds that "consequently the operators would not or could not produce it"—because they would not and could not afford to sell coal below the cost of production, even though the demand were zero, the reason not being offered by Mr. Dunn.

We differ with the conclusion that as a result of lack of production the first half of last year the country's available supplies were not increased as they should have been—a truer statement would be that the country's available supplies were decreased as they should not have been. There was an ample supply above ground and in the hands of consumers in the spring of 1919 but consumers elected to burn their stocks and not buy for current use, so that by the time the strike was over last winter stocks were as nearly exhausted as they might well be and industry proceed at all.

In the last analysis, according to Mr. Dunn, the present coal situation is not due to any failure of the railroads but to the loss of production last year, from lack of buying in the early months, and the strike later. What a help, he thinks, would be the coal that we did not produce last year, if we had but dug it. We submit that this is specious reasoning. Mr. Dunn notes that in the first three months of this year the mines were producing and the road transporting the coal that was needed. The crux of the whole situation is lack of production since April 1, which he correctly, we believe, attributes to the demoralizing effects of the outlaw switchmen's strike. We may as well mourn for the coal that could have been produced in 1914 and was not as for that which was not mined in 1919. We heartily concur with Mr. Dunn in laying this lack to no fault of private railroad management, but to labor. The coal operators are absolutely correct in attributing the lack of coal to lack of transportation, but that charge need not be construed as an indictment of private railroad management.

The insistence of the coal operators in 1917 that lack of transportation was the cause of coal shortage is held to have been the principal cause contributing to the assumption of Government control of the railroads during the war. Perhaps it was; at any rate the desired results were obtained and could not have been reached in any other way—again through no fault, perhaps, of private management of the carriers. It helps none for an advocate of the railroads to try at this date to endeavor to pass the responsibility for the coal situation to the coal operators. Better recognize the problem as it stands today and join in the constructive movement fostered both by railroad executives and coal men to work the way out with credit to all.



GIGANTIC MATERIAL-HANDLING MACHINERY

A striking view of the huge crane and belt conveyor system that is being used in the yards of the Byproducts Coke Corporation at South Chicago, an industrial suburb of Chicago. The cranes move on railroad tracks built for them. The buckets pick up coal and put it on belt conveyors which carry it to the factory. One of the big belt conveyors is at the right.

Is the Coal Shortage Real or Imaginary?

Stocks Are the Lowest in Five Years—Present Rate of Production Is Barely Sufficient for Consumption and Exports—Inequalities in Production and Distribution Make Necessary An Output of 11,500,000 Tons Per Week If a Serious Condition This Winter Is To Be Forestalled

BY C. E. LESHER

DURING June and July of this year the production of bituminous coal after exports had been deducted was but little more than sufficient to provide for the actual summer rate of home consumption. For the preceding April and May, after total exports had been subtracted, the production lacked between 8,000,000 and 9,000,000 net tons of meeting our national needs, and stocks were cut into by that amount. Stocks of bituminous coal in the hands of consumers, including the railroads, are now and have been since last November the lowest of any period, summer or winter, in the last four years, back of which no record is available. Measured in terms of days' or weeks' consumption there is now but 85 per cent as much coal in storage as in the period from October, 1916, to April, 1918; while, measured in actual tons, only 81 per cent as much coal is on hand. Taking into consideration consumers the country over, there was on Aug. 1 but a trifle over two weeks' coal in storage, while in the eighteen months beginning with October, 1916, two and one-half weeks' supply was available for consumers.

This article deals only with bituminous or soft coal. Retail dealers and consumers of Pennsylvania anthracite or hard coal should not read into these statements a parallel to the situation with respect to that kind of fuel.

From the autumn of 1916 until the early summer of 1918, when output permanently overtook consumption, production less net exports barely matched consumption and this country passed through a period of sustained coal shortage, the public demanding more coal than the producer, hedged by lack of car service, could supply. To put the matter more clearly, while *on the average* during that period production was sufficient for actual needs, the output was entirely insufficient to satisfy the insatiable demand. Prices soared; the committee on coal production was organized and failed when it staked all on voluntary price fixing. Then the Lever Act was passed and the Fuel Administration came into being and fixed maximum prices for coal. Think back over those eventful months—of the tremendous public uproar on the subject of coal, of the shutting down of industry for which lack of coal production was blamed, though in justice to everybody the unusually severe weather should be held partly responsible. Recall also the efforts that were necessary to keep hospitals and homes warm and public utilities in operation, and bring

to mind again the Government control and regulation by which efforts were made to remedy the nation's fuel needs. No one cares to contemplate another such trying time, but in all essentials the country is now facing the definite possibility of a repetition of the same conditions, the same troubles and trials that faced us, all unknowingly, in the autumn of 1916.

In brief, the basic facts are that stocks of bituminous coal are below the safety level and consumers know it. Production, though gaining, is at too low a rate to assure us of reaching a safe level of reserves before winter, and there is therefore an actual present shortage of coal. There are but two possible avenues of relief, and as in 1918, when the same problem was gloriously solved, resort must be had to both in increasing degree. The first and most important is increased production, the second is proper distribution. Unless the anxiety as well as the actual needs of consumers of all classes are assuaged before Dec. 1, and possibly sooner, the sword of Damocles will fall on the coal industry.

Consumer Displays Variation of Interest

When the normal coal consumer thinks he has enough coal for his needs, he has no interest in the subject and when he thinks he has not enough his interest is keen, for coal is absolutely necessary. And when the coal consumer concludes that he needs more coal and he experiences increasing difficulty in obtaining supplies, he is quite likely to be stampeded. The individual consumer may not know how many tons of coal there are above ground in the whole country or how fast coal is being produced, but he does know about his own supply and needs, even if he does not always act intelligently on the information. Individually and in the aggregate coal consumers are slow to change their minds. When they stop buying, because they think they have sufficient supplies, they stay out of the market too long, and when they get started they are hard to stop.

Consumers are actively seeking coal this summer, and if past performance is any guide, consumers will stay in the market for more than actual daily consumption until stocks are again at a high level. Once stampeded the consumer will not cease his search for coal until his storage pile is above the normal. In the summer and autumn of 1918 the assurance of supply afforded by fixed prices and the absolute and effective control of distribution did not check the consumer's anxiety and eagerness for coal. Little wonder that today with prices on free coal the highest on record and with none but the most general control over distribution, the buyer is anxious. Proper distribution will prevent distress this winter, but augmented production is necessary to lower prices.

I do not believe that the market will fall to reasonable levels this winter unless stocks of bituminous coal mount to 40,000,000 tons by Dec. 1, a gain of 18,000,000 tons over Aug. 1. Consumption is estimated at 41,000,000 tons per month, and exports for June and July averaged about 3,500,000 net tons per month. Thus if we consider the four months, August to November inclusive, as representing the possible period of preparation for the rigors of winter, we must have in the seventeen weeks beginning with Aug. 1 an average production of 11,500,000 net tons to meet requirements for consumption no greater than those of today, we must export no more than we are exporting today and we must provide a surplus of 18,000,000 tons so as to raise the reserves from enough to satisfy for about two weeks to an amount that will fill our needs for nearly twice that length of time.

Can it be done? Yes. Furthermore it begins to look as if it were started on the way. Production of 46,000,000 tons was reached and exceeded during one month in 1916—January—for eight months out of the twelve in 1917, for eight months in 1918, for two months in 1919 and in January and March of the present year. This rate of output is not likely to be reached and maintained without continuance throughout the autumn of the open-top car priority order. Any rate of production that does not provide for current consumption, a practical doubling of stocks by Dec. 1, as well as for whatever exporting of coal may be permitted, will leave the country to suffer from a shortage similar to that experienced in the winters of 1916-17 and 1917-18.

It may be argued that an average weekly output of 11,500,000 net tons (10,700,000 tons after exports are subtracted) does not provide for the shortage of 5,000,000 tons in Lake movement and that this quantity should be spread over the period, thus raising the estimated rate required. However, it must be considered that by making allowance in the exports for shipment to Canada a part of the Lake shortage is provided and that the bulk of the remainder is in the increase in stocks in the hands of consumers, for which allowance has already been made in these figures.

Equal Distribution Must Be Maintained

Even though production is increased in the measure indicated as necessary, every effort must be made and maintained to correct evils of distribution. Since we are now producing coal at a rate sufficient to meet actual consumption, it is apparent that one important cause of trouble is and will continue to be unequal distribution combined with a condition of anxiety brought on through lack of abundant stocks. That is, consumers knowing that coal is reported short, will each and all endeavor to increase their reserves as an assurance against some unforeseen contingency.

If it were possible to have the distribution of coal so handled that stocks would be leveled up, each consumer in New England, for instance, having the same proportional share in accordance to his requirements, with the whole territory having a supply that would on an average last several weeks more than that afforded some other section of the country nearer to the mines, and if furthermore each consumer had assurances that he would get each week his proper share of the output, then we would be successful in managing with much less coal than we otherwise could. But these are ideal conditions that cannot be realized. Some steps in this direction are necessary, however, if trouble is to be avoided in the period running from the present date to that at which it is hoped that stocks will be so large that consumers will forsake the market and the newspapers forget coal.

In a large way the National Coal Association, the railroad officials and the Interstate Commerce Commission have solved the major problems in distribution—New England and the Northwest. By allowing assigned cars the Interstate Commerce Commission has taken care of the largest consumer—the railroads—and also of many smaller and essential users—the public utilities and institutions. That seems to be about as far as that body can proceed with distribution, but it is

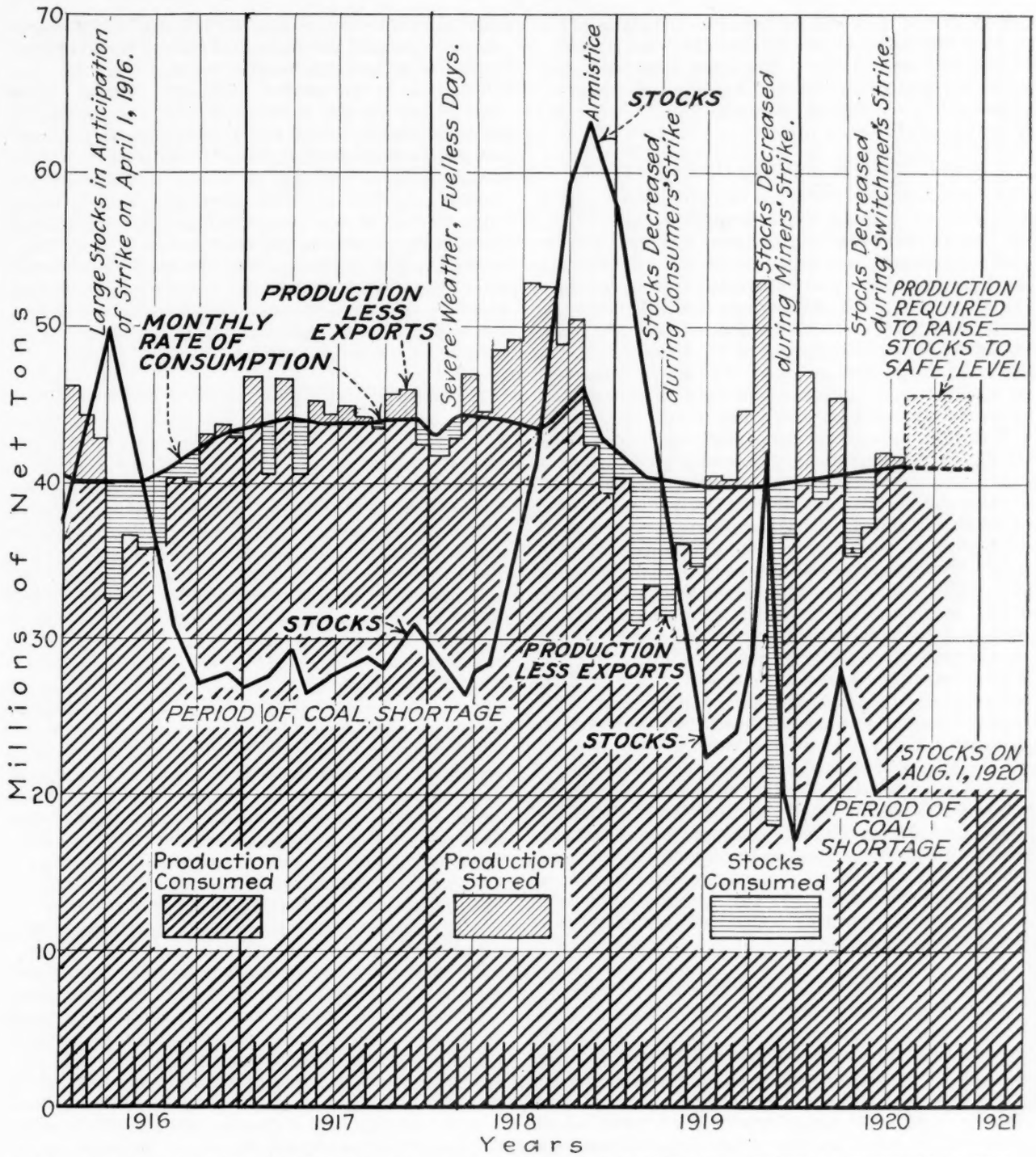


DIAGRAM SHOWING RELATION OF AVAILABLE PRODUCTION, CONSUMPTION AND STOCKS OF BITUMINOUS COAL IN THE UNITED STATES FROM JAN. 1, 1916, TO AUG. 1, 1920

The data from which this diagram has been constructed are taken from official reports of the U. S. Geological Survey. The line of production less export is the monthly record of production of bituminous coal from which has been subtracted export less import. The result is production available for consumption or storgae within the United States. Crossing the diagram in a somewhat irregular manner is a heavy line representing consumption.

It will be noted that consumption increased nearly 10 per cent at the end of 1916 over the rate in the arly part of that year, and that this rate of consumption was maintained until shortly before the armistice, when a sharp upward trend, culminating at the date of the armistice, took place. Immediately after the armistice consumption decreased, reaching its lowest level in several years in the months that followed. Its trend is now believed to be slightly upward. The small depression in the curve of consumption in the middle of the winter of 1917-1918 was due to the severe weather in those months and the extreme shortage of coal due to the inability of the railroads to make deliveries, although the coal was produced and on the railroads en route to the consumer. The fuelless days decreed by Dr. Garfield in January, 1918, are reflected in this decrease in consumption.

only the starting point for the shippers of coal. Shippers of coal—operators and jobbers—can by exercising self-restraint and judgment in their daily distribution of coal, do more than by any other means to avert the falling of the house on their heads. If each coal man will distribute his coal where, in accordance with his good judgment as a coal distributor, that coal is needed the most; if he will sell his coal more freely to consumers who have little than to those who in proportion have much, and if he will not be governed in this distribu-

tion by prices, then will we have less complaint of the coal industry as profiteers and less cause for complaint of coal shortage. I know that many large and small companies with an interest in the future and a business to maintain are doing this now and doing it well. But many are not.

Small Operator Sells to Highest Bidder

In some instances the entire output has been sold to a jobber, and in this case the duty is the jobber's and not that of the producer. In many other instances the smaller operators have no contracts and are selling to the highest bidder, who is usually represented by a jobber or jobbers. Such cases are almost hopeless, for the producer has no interest in the future of the industry, being interested only in price. If the jobber does not offer the highest price he does not get the coal, no matter how needful his customer. Complete elimination of wagon mines would only partly remedy this evil, for there are many small tipple operations whose selling policy is jeopardizing the welfare of the industry.

The dangers in the present situation—dangers both to the coal industry and the public—cannot be too often or too clearly stated. Stocks are below the safety level, production has but begun to approach the rate that will supply the current needs, will provide coal for export and swell the stock piles to a degree that will give confidence to the consumer. In the meantime the clamor for coal is insistent, spot prices exorbitant and the country is experiencing all the symptoms of a coal shortage. In the last analysis the fault lies more largely with the coal consumer than with any other agency, even as the remedy lies with coal and railroad industries, but the consumers will not accept the responsibility and will not hesitate to foist on the coal producer some form of Government control if all other measures fail. In the words of Harry Taylor, former president of the National Coal Association, the coal producer should concentrate on production and on leveling off the peaks and filling in the low spots of supply. I would further urge taking the public fully into our confidence, admitting the dangers, and creating a spirit of helpful co-operation and conservatism.

Reliable Estimates of Stocks Now Available

Four elements enter into the study of the coal situation—production, exports (less imports), stocks, and consumption. For years we have had accurate information on the first two elements only. Consumption and stocks have been matters of speculation and guess work. Thanks to the zeal and efforts of Mr. Tryon, of the Geological Survey, there has within the last few weeks been placed at our disposal reliable estimates of stocks of bituminous coal in the United States on a sufficient number of dates to enable an intelligent study to be made of all the factors, for, having three of the four, the fourth can be deduced with reasonable certainty.

The importance of data on stocks of coal in the hands of consumers was clearly recognized by the distribution division of the Fuel Administration, and in the summer and winter of 1918 the bureau of statistics collected at great cost a vast amount of information on this subject. Without these figures it would have been impossible to know whether or not the coal production in those trying times was meeting the needs of the country. After the war was over an attempt was made to continue the study of current stocks, and figures were collected for the first quarter of 1919, but lack of appropriation prevented the Geological Survey from continuing the work, although Senator Frelinghuysen gave his full support to the project. Recently, through funds appropriated for the Bituminous Coal Commission, it has been possible to add to the knowledge on this subject at an extremely vital time. In reducing to a comparable basis all the data on stocks of coal from the earliest record of the Fuel Administration (October, 1916) to June of this year, Mr. Tryon has contributed the missing chapter in the story of coal. I am fully conversant with the raw statistical material from which these figures are drawn and the statistical methods used in arriving at the totals, and do not hesitate to accept the results as sufficiently within reasonable limits of error to be trustworthy guides.

Relation of Output to Consumption Shown

The diagram accompanying this paper tells the story better than words. Month by month from the beginning of 1916 to the end of July, 1920, the relation of available production (actual tons produced plus imports less exports) to consumption is shown and the curve of stocks in its upward and downward movements is traced. Although data on stocks are available for but nine dates from Oct. 1, 1916, to June 1, 1920, it has been possible to interpolate figures for each month and extend the curve back to January, 1916. The line of monthly consumption is determined from the averages in the periods between the dates for which stock figures are available. Thus, by adding to the number of tons of coal on hand at the beginning of a period the production plus imports less exports during that period and subtracting from that total the stocks at the end of the period, consumption in the interval is determined. Dividing this figure by the number of months in the period gives the average monthly consumption. The eight points thus determined between the nine dates for which figures of storage are available were connected, due allowance being made for local variations. The average daily production of pig iron published by the *Iron Age* was used as indicating the trend of consumption of coal.

The first point to be noticed is that the rate of production is not an indication of the rate of consumption. Comparatively, the rate of consumption is regular, while the rate of production and the amount of stocked coal are quite variable. The intense activities of war in 1917 and 1918 raised the rate of consumption only 10 per cent over that in the early part of 1916 and the rate now is approximately that of the period immediately before the United States entered the war. Compared with a maximum variation of 15 per cent in consumption in the period covered by this diagram, production had a maximum change (excluding that during the coal miners' strike) of over 40 per cent from September, 1918, to March, 1919, and stocks a maximum change of more than 200 per cent.

Conditions Clearly Explained by Events

The picture of the coal business of the country in the last five and one-half years is plainly revealed in the diagram. The situations that have developed in that time carry their own explanations. Beginning with the first quarter of 1916 it is noted that in anticipation of the usual cessation in mining in the Central Competitive field in the even years while a new wage contract

is being negotiated consumers increased their surplus by 12,000,000 tons. The expected closing of the mines did not take place and the output in April of that year was almost equal to the normal production for that month. Consumers, however, were so well stocked up that they went out of the market and burned storage coal, all unmindful of the increase in consumption that was already taking place as a result of the quickening industry that followed the heavy buying of war materials by the European allies. Consumers did not wake up until August, and the demand for coal and the sudden increase in prices that date from that month are matters of history. This lack of foresight of the managers of industry in the summer of 1916 was directly responsible for the coal shortage of the next year and a half, because the storage that was needlessly consumed that summer while mines were idle for lack of orders left the country with depleted reserves that were not brought back to a proper level until late in 1918.

Stocks were down to 27,000,000 tons by the end of September, 1916, before the rate of production overtook that of consumption and a state of equilibrium was reached. In the eighteen months beginning with October, or until April, 1918, production was no more than sufficient to meet actual needs and reserves were not increased. This was a period of coal shortage, nevertheless, and the conclusion cannot be escaped that the reason was not lack of sufficient production month by month to run the country, but paucity of reserves. Wihout question an average supply in the hands of consumers sufficient for but two and one-half weeks spells coal shortage when the consumer finds it out.

Armistice Marked High Point in Stocks

From the first of April, 1918, to the day of the armistice production gained on consumption and reserves were steadily increased. It will be recalled, however, that it was not until October of that year, after total stocks had considerably more than doubled over those held in April, that there was any let-up in the demand for coal, and that a slackness of trade developed and that lack of market was observable only in the Middle West. The Fuel Administration, the railroads and coal industry, having set out to give the country all the soft coal it desired, builded better than they knew, for on the day of the armistice stocks had reached the unprecedented figure of 63,000,000 tons.

This country is in its present predicament regarding coal because of three strikes that followed one after the other when hostilities abroad had ceased. The first of these strikes, the greatest of them all, and I believe the most momentous that ever affected the coal industry, was that of the coal consumers. From the day of the armistice until awakened by the "Buy-Coal" campaign of the National Coal Association in June of 1919, a total of 41,000,000 tons, or more than 5,000,000 tons a month, was taken from storage. The consumer refused to buy, and the drop in reserves in extent and precipitateness is without parallel in our history. It is not too much to say that had this consumers' strike been settled three months sooner than it was—had the decrease in reserves ceased in April rather than in July—there would have been no strike of the bituminous coal miners last November. The chief cause contributing to the unrest among mine labor in the summer of 1919 was lack of work. The mines were idle a great part of the time for lack of orders. Plenty of railroad cars were on the tracks, empty, waiting for loads of coal, but industry did not want the coal. The miners' claim for a 5-day week was based on the theory that they could in that time produce all the coal required. It mattered not that the theory was unsound because coal was being burned at a rate 14 per cent greater than it was being produced, a condition that could not endure for long.

Certainty of Strike an Impetus to Store

The nation's stock pile began to grow in July and August of last year but the real impetus to store did not come until the possibility and then the certainty of a huge strike of coal miners was discerned. Thanks to the co-operation of every one—the coal miners included and the Railroad Administration in particular—production was increased in the two months before the strike to such an extent that reserves were again elevated to a safe level. These stocks carried the country through the strike, not without many discomforts, however, but left us on New Year's Day of this year with less coal on hand than ever before—namely, about 17,000,000 tons. Thus the second of the three strikes, that of the coal miners, served to put the country still further in a precarious condition regarding coal.

We would have been all right even then had it not been for the third successive strike, that of the switchmen, last April and succeeding months. Stocks of coal made a satisfactory gain in the first quarter of this year, for production in January and again in March was at a high level, and total reserves approached the 30,000,000-ton mark. The damage to reserves caused by the switchmen's strike was small compared to that of the two preceding strikes, but a drop in the second quarter of the year, though not great, when there should have been a gain, has brought the country into a condition of coal shortage. To raise the nation's coal reserve from 22,000,000 tons to 40,000,000 tons in four months is not impossible. The same increase was effected last year in the same period of time and much more was done during the war.

Some are sure to ask why, if we are exporting 3,500,000 tons of coal a month, should we not keep that coal at home and thereby make a further gain of 14,000,000 tons in the four months. I will say nothing more here than that it cannot be done in that way. A fraction of the amount might thus be saved, but only a fraction.

Consumer Blamed for Low Reserves

I believe it has been made clear that the consumer, through lack of foresight and refusal to buy coal when he had what probably appeared to him to be an inexhaustible supply, was directly responsible for bringing the country to a condition of such low reserves in the autumn of 1916 and again in 1919. This statement of the situation would not be complete without adding that our ability to recover has been and is absolutely dependent on the ability of the railroads to move the coal from the mines to the consumers. In the autumn of 1916, when the laggard consumer did wake up, he found that car shortage prevented acquisition of supplies at the desired rate. This condition obtained throughout 1917 and well into 1918. Again this spring, after getting away with a good start, the railroads, crippled by the outlaw strike, failed to meet the demand for transportation of coal, and the figures of car shortage are the greatest on record. This is not stated as a criticism of the railroads but as an exposition of fact.

Electrical Engineers Accept Federation Invitation

At a meeting of the Board of Directors of the American Institute of Electrical Engineers held in New York Aug. 12, the institute unanimously adopted a resolution accepting an invitation to become a charter member of the Federated American Engineering Societies and pledged hearty co-operation.

New York Central Increases Freight Movement

Despite shortage of equipment and labor troubles the New York Central lines increased their freight transportation for the first five months of this year 12½ per cent over the same period last year, according to figures made public by A. H. Smith, president of the New York Central system.

Seek Coal in Saskatchewan

An expedition consisting of the principal mines inspector, chief land surveyor and a geologist left Prince Albert, Sask., Aug. 9, for the Lake Laronge country to explore for coal deposits and other natural resources. The party has been sent out by the Saskatchewan Government to make a complete survey of the area, in which it is asserted that many valuable resources abound. There have been repeated stories of valuable coal deposits in the lake country.

Effort for Record Kills Miner

Tony Bannock, who held a record of having loaded sixteen cars with coal in one day, died at Fair Point, Ohio, Aug. 11 while attempting to break his own record. He had loaded six cars in less than two hours when death occurred from a ruptured heart. Bannock was employed at the Troll Coal Co. mines.

Railroads May File Blanket Schedules of New Rates

The Interstate Commerce Commission on Aug 11 granted the railroads special permission to file blanket schedules to make effective new passenger, Pullman, excess baggage and milk rates recently authorized.

New Freight Rates to Boost Coal Price 75c. to $1.35 a Ton

That the advance in freight rates recently granted by the Interstate Commerce Commission will cost the consumer at least 75c. extra on a ton of coal, the railroads are forced to admit, although they continue, through press agents, to flood the public with statements that the increased rates should not cause an appreciable advance in retail prices. "Coal," says *American Railroads*, the organ of the railroad executives of the country, "is one commodity that will be directly and appreciably increased to the consumer by the rate advance, the amount being from 75c. to $1.85 a ton."

Seek Priority for Gas Coal

The Emergency Committee of the American Gas Association has announced that the Interstate Commerce Commission will be urged to issue priority orders upon shipments of coal intended for use in making gas. It is the suggestion that these shipments have priority over everything but food. Another suggestion is that foreign coal shipments from Atlantic tidewater points be restricted until winter bins of New England are partly filled. Henry G. Bradlee, president of Stone & Webster, points to a gas shortage in the coming winter unless some such steps are taken.

NEWS BRIEFS

Terse Items Chronicling Events of Interest to the Industry

Navy Discontinues Commandeering of Oil and Gasoline

The Navy Department has arranged contracts for approximately 90 per cent of its West coast fuel oil requirements and its complete supply of gasoline, thereby enabling it in most cases to discontinue the practice of commandeering these supplies.

New York Utilities Still Far Behind Normal Coal Surplus

A report received by Acting Public Service Commissioner Barrett showed that on Aug. 18 the various public utilities in New York City, had a total of 273,313 tons of coal, an increase of 14,000 tons over the preceding week. Mr. Barrett said that the companies were more than 100,000 tons behind their normal coal supplies and that he regarded inability to increase the surplus more rapidly as indicating a serious shortage in the autumn. He said the Interstate Commerce Commission would be asked to extend the city's priority order until the utility coal stocks were great enough to tide them over any possible delay in deliveries.

Steel Demand Less Active, but Shipment Improves

In its weekly summary of the iron market as of Aug. 18 the *Iron Age* says in part: "The steel market is less active. There have been further cancellations of steel by automobile makers, but the effect has been greater on sentiment than on steel-mill operations. The shipments of steel from mills is better on the whole and the situation is expected to work easier, notwithstanding that Pittsburgh reports of improvement are qualified. Production results are more satisfactory, most Chicago district plants having gone back to the schedule prevailing before the Illinois-Indiana coal strike.

Wage Board Asks Pennsylvania Miners to Return

Striking coal miners in western Pennsylvania are expected to return to work after the appeal to them from Washington by the Federal Anthracite Coal Commission to resume work pending settlement of their grievances by the Board of Mediation and Conciliation. The commission appealed directly to the Pennsylvania Coal Co. miners. The Conciliation Board may report on the strike grievances this week.

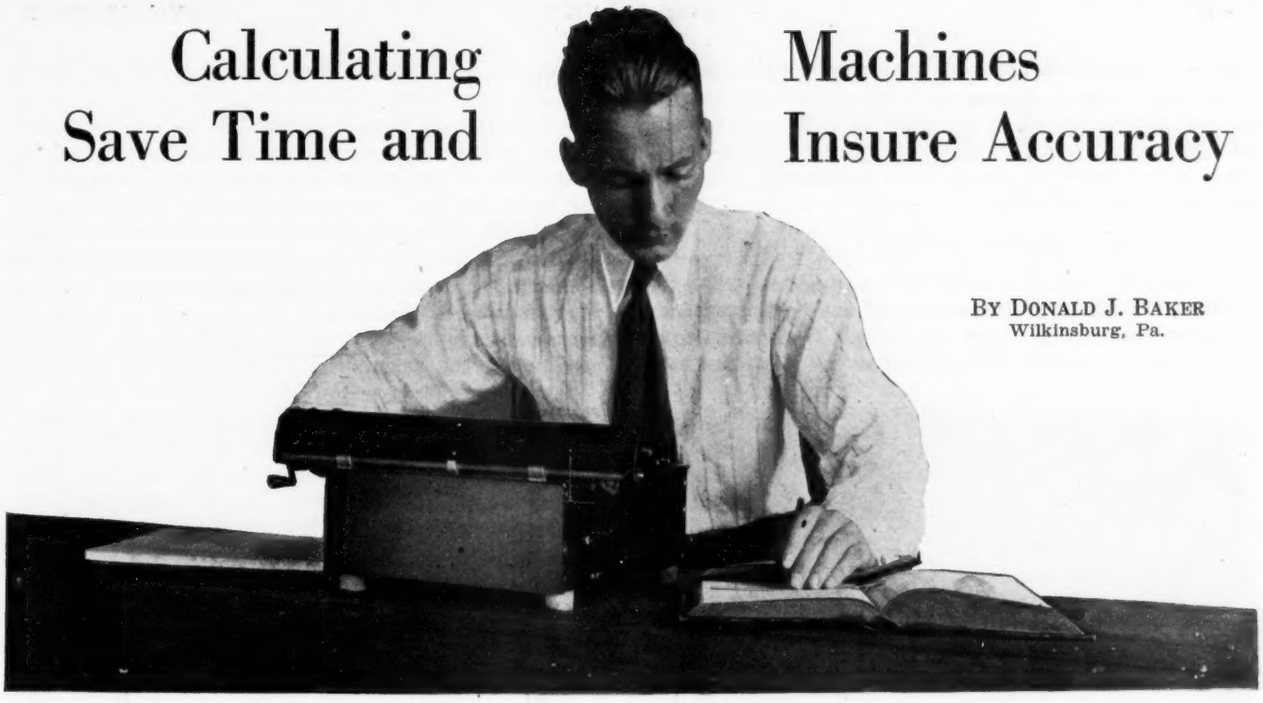
New York Central May Issue New Securities

Application has been made by the New York Central Railroad Co. to the Interstate Commerce Commission in Washington for permission to issue new securities amounting to between $20,000,000 and $25,000,000. These securities, should the application be granted, would be sold to refund the forthcoming maturities of the company, $15,000,000 of which falls due on Sept. 15 and the remainder at later dates in this year.

I. C. C. Recommends Loan of 200 Milllions to Roads

Distribution of almost $200,000,000 to the railroads of the country was recommended to the Interstate Commerce Commission Aug. 17 in the final report of the Association of Railway Executives on the applications of the various carriers for loans from the $300,000,000 revolving fund created by the Transportation Act. Under the new recommendations loans for additions and betterments would be increased from $7,062,053 to $8,317,943; those for additional cars and equipment would be increased from $35,050,289 to $78,349,389, and those for freight and switching locomotives from $28,868,629 to $29,054,323. A total of $52,839,943 was recommended for loans for building 15,300 new box cars and loans to meet maturing obligations would total $28,800,875.

Calculating Machines Save Time and Insure Accuracy



By Donald J. Baker
Wilkinsburg, Pa.

Engineers' Work Should Be Aided Mechanically as Much as the Work of Men in Active Coal Production—When Survey Parties Perform Their Own Calculations in the Field There Is Less Chance for Misinterpretation of Figures in the Office

IT HAS often been said that we are living in a mechanical age. Labor-saving devices have been placed on the market recently with such rapidity and in so great profusion that many have facetiously asked if there will be any room for a laboring man in the industries of tomorrow. Usually, however, when we think of a labor-saving machine we connect its operation with the husbanding of brawn and muscle; but as labor may be of two classes—physical and mental—mental labor-saving machines are quite as necessary as those of the other type. Indeed they may be even more so, for they find a general use among men in executive positions. The time of a man of marked ability is more valuable and therefore more carefully to be conserved than the time of a less-talented individual.

The wide or nearly universal adoption of calculating machines by offices of all kinds within the last few years is significant of the change which is coming. Engineering offices in particular have taken them up rapidly. Where long and tedious computations were formerly executed via the scratch-pad route we now find the calculating machine installed and doing the same work. It, however, accomplishes the results with a speed and accuracy unattainable by other methods. No lightning calculator in human form can hope to compete with a calculating mechanism.

Most engineering computations in themselves are more or less mechanical; that is to say, after the correct substitutions of figures have been made in long-established formulæ the actual solving of the resultant equation involves nothing more than the most rudimentary of arithmetical operations, namely, addition, subtraction, multiplication, division and an occasional use of square and cube root.

These calculations take the greater part of the time occupied in the solving of any mathematical problem. The assembling of the figures involved is a small matter and quite readily accomplished, especially where the formula is one that repeated use has made familiar. In a problem that may require an hour's work, perhaps forty-five minutes will be expended in labor which requires only the ability and the patience to add, multiply and divide with accuracy.

Calculation of Double Meridian Distances

For instance: Suppose it is desired to find the area of an irregularly-shaped tract of land that has been surveyed by the azimuth method. Usually after the field bearings have been reduced to their quadrant values and the latitude and departure distances ascertained with the aid of Gurden's traverse tables and duly recorded, we say the remainder of the problem is easy. But is it? Rather do we mean that the latter half of the problem is mechanical and is easy only in that no constructive thought is demanded, as definite and well-memorized rules are available for the calculator.

These, however, involve much multiplication, some addition and subtraction and a small amount of division. Inasmuch as the major portion of the problem demands nothing but multiplication—that is, as far as actual time required for the solution is concerned—it is apparent that our brains are being burdened with the simplest of arithmetical computations. Thus while the operation is simple it nevertheless consumes a large amount of time and paves the way for the entrance of many petty inaccuracies.

In the accompanying line drawing a double-meridian distance problem has been solved by two methods—one with the aid of scratch pad, pencil, time and thought, and the other by means of a Monroe calculating machine. This computing device adds, subtracts, multiplies, di-

vides and extracts square and cube root with surprising speed and absolute accuracy. The type of engineering calculation illustrated is one that is well known to all mining engineers, for it is constantly being encountered. Note the amount of pencil work required in the one case as against the other.

Figures Are Put Directly in Columns

No scratch pad is needed in conjunction with the machine, as the only figures desired can be immediately placed in columns prepared for them. The machine has performed the same mathematical work that has been done with paper, pencil and mental effort, and accomplished it not only more rapidly but also more accurately. The outstanding feature, however, of the one operation as compared with the other is the immense saving in time, although the comfortable feeling produced by a knowledge that the results are accurate is no small consideration.

So many and varied are the calculations encountered in the engineering field that heretofore every available assistance for the attainment of accuracy has been sought, including tables, slide-rules and logarithms. In particular has the slide-rule had an extensive use, even though by its aid only approximate results can be attained, while the placing of the decimal point has always been a bugbear. It is improbable that the slide-rule will be entirely displaced by calculating machines, but it will not be used as generously as it has been in the past.

Gurden's Table a Dubious Competitor

As regards logarithms, their death knell appears to have been sounded. It is so much easier to employ the tables of natural functions and multiply directly on the machine than to employ tables of logarithms. So it is a safe prediction that the time is not far off when logarithms will be dispensed with altogether. Even with the problem that is illustrated a book of traverse tables is not a dire necessity for conserving time.

As a matter of fact, it is possible to set the natural sine or cosine value on the machine and multiply by the latitude or departure distance nearly as quickly as it is to secure the same figure directly from the many pages, columns and tabular lines of the traverse tables, on which, be it remembered, it is customary to use both a teller and recorder. In this manner also more accuracy may be attained when dealing with large figures where calculations to two places are required. Furthermore, when the calculation is performed by a novice there is not so great a possibility of an error being introduced as there is with traverse tables.

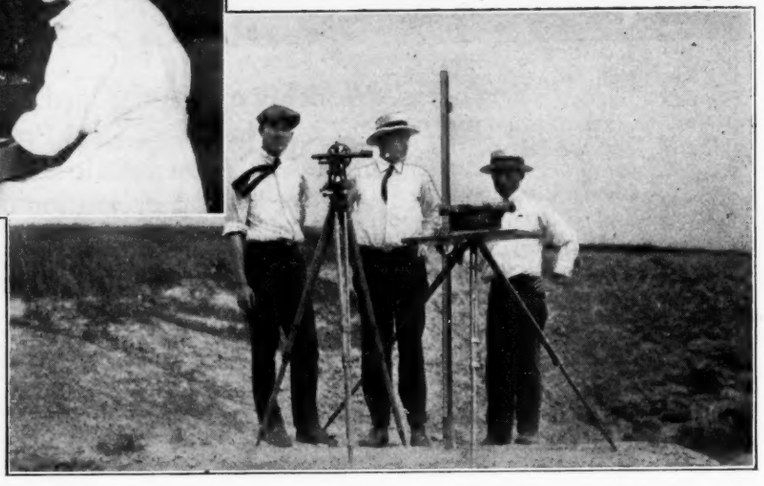
There is no engineering calculation involving addition, subtraction, multiplication, division, square or cube root that cannot be performed on a suitable calculator. This range, of course, covers a multitude of long and tedious computations that are the *bête noir* of an engineer's life and lower his output considerably. It is difficult to imagine an engineering office in this country operating without such a machine, regardless of the amount of work that it may be required to perform.

Well-Suited to Computations of Elevation

Another series of computations to which the machine is well adapted is the rapid calculation of levels. Starting out with the original benchmark, backsights may be added and foresights subtracted so quickly that the carrying of elevations becomes the simplest and most accurate of operations. If several rod-readings are to be taken from a single setting of the level the calculation is quite simple, as the height of the instrument plus the elevation is set upon the calculator, after which the various rod-readings may be subtracted for the desired elevations. One turn of the crank on the calculator subtracts the foresight, while a turn in the opposite direction adds it back in and gives the original elevation of the level.

Drafting Room, Bertha Coal Co.

Ordinarily one calculating machine will serve the needs of the drafting room, but when there is an exceptional demand for calculations two others, as shown here, are borrowed from the auditing department, and the need of the moment is thus met.



Survey Party Ready for the Field

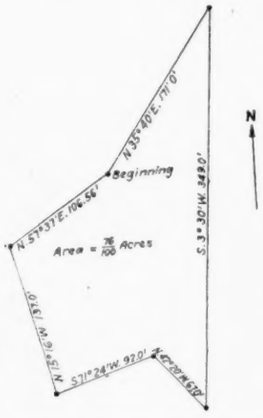
The size of the Monroe calculator may be judged by comparison with the transit on the left. A special case is provided for the machine so that without injury it may be subjected to severe usage in traveling.

Thus it is not necessary to reset the figure after each calculation. This sort of computation involves a series of additions and subtractions and is remarkably easy to perform. By the old plan, when a level has been run between two bench marks, the levelman sets himself down on a log or the bole of a tree and laboriously adds the backsights and foresights and takes the difference between the totals, only to find that they do not agree with the difference in elevation as he has figured it. A mistake has been made somewhere and only by much work it is found out and, with much erasure and recalculation, corrected.

On the other hand, if a calculator has been used the levelman knows that his work is correct and that it is a waste of time to total the backsight and foresight columns. In fact, it probably will be the custom where it is possible to have a calculator at hand to omit their use altogether and to enter only the results in the notebook. Other figures are useless and cannot be checked.

The calculating machine is a time saver in more ways than one. Survey parties working out of the main office of the United States Coal & Coke Co., at Gary, W. Va., are equipped with these devices before they take the field. This concern realizes that much time is lost in the engineering office in working up survey notes before plotting. Especially is this true in the making of maps.

Outside of the loss in time involved there is always the possibility that some small error may have crept into the notes of which the draftsman, unfamiliar with the ground, might not take cognizance but which the man who had been in the field would instantly recognize. A man who makes an excellent chief of a survey party often is a poor draftsman, and it becomes impossible to obtain a nicely-drawn map when he is permitted to plot his own notes, even though the most accurate results are attained by this method. Besides, there is so much field work to be done by a large company that it would be inadvisable to hold the members of a survey party in the main office part of the time.

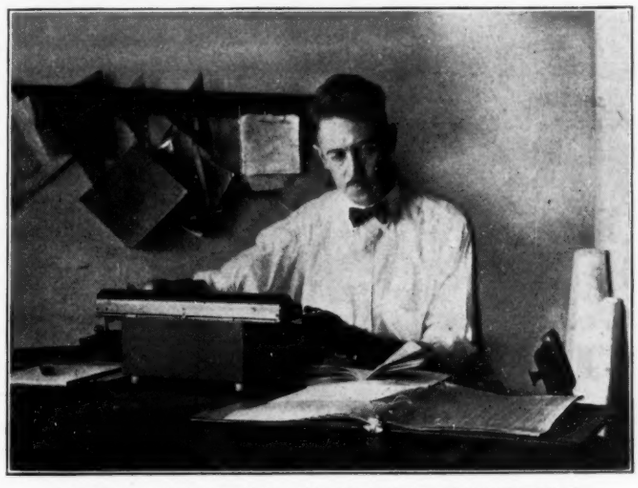


The Survey of an Irregular Tract

This furnishes a ready comparison of the machine and hand methods of calculation. The upper figure shows the tract of land and the tabulated machine calculations; the lower shows the same tabulation and the laborious computations by which the results are obtained.

NO.	BEARING	DISTANCE	N. OR +		S. OR −		E. OR +		W. OR −		D. M. D.		+ AREA		− AREA	
1	N.35°40'E.	171	138	92			99	71			279	69	38 54	53		
2	S.3°30'W.	349			348	35			21	31	358	09			124740	65
3	N.42°20'W.	67	49	53					45	12	291	66	14445	92		
4	S.71°24'W.	92			29	34			87	20	159	34			4675	04
5	N.15°16'W.	137	132	17					36	07	36	07	4767	37		
6	N.57°37'E.	106 56	57	07			89	99			89	99	5135	73		
			377.69		377.69		189.70		189.70				63,203	55	129,415	69

63 203.55
2 | 66 212 14
43560 | 33 106.07 Sq. Ft.
Area ..... 76 Acres



NEATNESS IS OFTEN AN INDEX OF EFFICIENCY

The draftsman's table should be kept clear of a promiscuous display of pencils and scraps of paper. Scratch pads and logarithmic tables soon grow dusty when the calculator is employed. This is a Bertha Coal Co. scene.

NO.	BEARING	DISTANCE	N. OR +		S. OR −		E. OR +		W. OR −		D. M. D.		+ AREA		− AREA	
1	N.35°40E	171	138	92			99	71			279	69	38,854	53		
2	S. 3° 30'W.	349			348	35			21	31	358	09			124,740	65
3	N42° 20'W.	67	49	53					45	12	291	66	14,445	92		
4	S.71° 24'W.	92			29	34			87	20	159	34			4675	04
5	N.15°16'W.	137	132	17					36	07	36	07	4767	37		
6	N.57° 37'E.	106.56	57	07			89	99			89	99	5135	73		
			377.69		377.69		189.70		189.70				63,203	55	129,415.69	

63,203.55
2 | 66,212.14 Area = .76 Ac.
43,560 | 33,106.07
30,492.0
2614.07
2613.36
.71

1 81.242 58.307
57.682 41.398
138.924 99.705

2 299.440 18.315
48.909 2.991
348.349 21.306

3 49.529 45.121

4 29.344 87.195

5 96.471 26.331
35.694 9.743
132.165 36.074

6 53.558 84.448
3.213 5.067
.299 .473
57.070 89.988

6 89.99
89.99
179.98
99.71
1 279.69
99.71
379.40
21.31
2 351.09
21.31
336.78
45.12
3 291.66
45.12
246.54
87.20
4 159.34
87.20
72.14
36.07
5 36.07

4 159.34 4 ✓
29.34 ✓ ✓
63736
47802
143406
31868
4675.0356

1 279.69 6|3
138.92 5|3
559 38
251721
223752
83967
27969
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2 348.35 5|8
358.09 7|8
313515
2786800
174175
104505
124740.6515

3 291.66 6|✓
49.53 3|✓
874.98
145830
262494
116664
14445.9198

5 132.17 5|8
36.07 ✓|✓
92 519
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6 57.07 1|8
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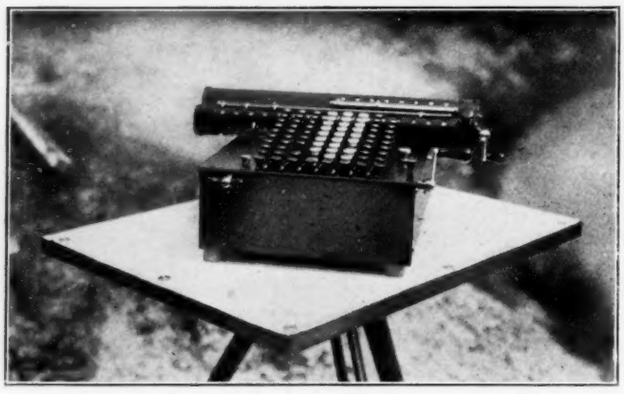


CALCULATOR MOUNTED ON PLANE TABLE

If the engineers do not intend to do any plane-table surveying the table may be used as a stand for the machine, thus providing a portable outfit.

When a party intends to absent itself for any considerable length of time on topographical work, a calculating machine is just as important a piece of equipment as any with which the party is supplied. No attempt is made to take the machine into the field during the day. It is left at the camp and is available at night or on rainy days and foggy mornings for the ready working up of the notes obtained during daylight and surveying hours. An old plane table may be used as a stand, thereby making a portable outfit.

While the machine is not particularly adapted to plane table surveying, it is well suited to stadia methods. For the reduction of stadia shots to horizontal distances and the calculation of elevations greater economy may be attained and with greater speed than is possible through the use of the regular stadia reduction charts or slide-rules. In ordinary traversing the co-ordinates of the different stations in the field may be determined. Thus it becomes possible to send the notebooks to the main office by mail, fully worked up. The draftsman can then go ahead on the making of the map without loss of time. This unquestionably is a more advantageous method than the one commonly followed and in practice today.

At the main offices of the Bertha Coal Co. in Pittsburgh five Monroe calculators are in use. Four of these are in the auditing department, while the fifth is kept in the drafting room. The one machine in the engineering office usually suffices adequately to handle the various calculations that arise from day to day. However, when there is a sudden influx of notebooks from the field, one or two machines from the adjoining department are borrowed for the emergency.

By reason of the diversity of the work that can be accomplished with such a calculator the demand for it around coal-company offices is perhaps greater in the auditing than in the engineering department. Here the machine is not called on to handle such complex calculations and the work is more nearly of a routine nature. The saving in time is therefore perhaps even greater.

Calculating machines were designed primarily for the rapid and accurate juggling of figures for the auditor and cost accountant and these men were among the first to realize the immense saving of time resulting from their use. Engineers now appreciate the machines quite as fully, as is evidenced by the growing number of offices equipped with them. Engineering-office efficiency has attained a new meaning, as has also the conduct of survey parties in the field. A closer co-operation now exists between office and field than was possible heretofore.

The illustration which forms part of the title head of this article was taken in the office of Howard N. Eavenson, consulting mining engineer, of Pittsburgh.

Twenty Years of Experience Have Made Mine Locomotives Reliable and Efficient

In the Last Two Decades Many Have Been the Improvements in the Mechanism of the Electric Locomotive—Indications Are That This March of Betterment Is Not to Stop in the Near Future

BY M. S. BEDDOW
Scranton, Pa.

A SCORE of years has wrought many important and interesting changes in the electric locomotive, for there were, of course, weak spots in the mechanism which actual use could not do otherwise than reveal and mechanical genius could not fail to rectify. Some changes that appeared radical at the time they were made do not seem so in the light of after events. In retrospect we see that they were natural occurrences forced on the designers and builders by the severe service imposed.

To some these improvements have seemed not only few and far between but of a minor character, for the external appearance of the machine is practically the same as it was twenty years ago. The major changes have been in operating parts, which are not easily observable. Only one who has kept in touch with these various innovations as they were introduced can know with certainty what they have meant in the hauling of coal. As each obstacle arose it was met and mastered by the designers. As soon as the redesign was completed the mine electrician would start a careful scrutiny with a view to familiarizing himself with the changes so that he would be able to locate trouble promptly, should the locomotive at any time appear to be functioning badly.

EARLY LOCOMOTIVES TOO LIGHTLY MOTORED

It will be the purpose of this article to enumerate and describe the various changes in this important coal-mine machine and the reasons for their introduction. Not many years ago mine locomotives were sadly under-motored and consequently overloaded. The sur-

prising part of the whole affair was not the undermotoring but the fact that any considerable time should have elapsed before motors of sufficient horsepower were installed. This came at last, however, although the change came slowly.

With the motor problem successfully solved it was naturally supposed that the efficiency of the locomotive would increase, and this belief was not without solid foundation. Modern mining, however, necessitated increased output, and this cannot be secured except by getting the maximum efficiency out of the equipment. Continuous severe operation will ultimately reveal the weak spots in any mechanism and of course point the way for improvement. An electrical breakdown is gratifying only because it shows a way whereby to prevent a recurrence of the trouble.

Four-Brush Holder Gave Much Trouble

Probably the one detail about the old locomotive that had the unanimous disapproval of mine electricians was the four-brush holder motor. Many of these are still in service, but fortunately on machines of sufficient horsepower to do the work imposed upon them. Narrow-gage machines were so limited in width and their armatures were provided with commutators of such slight stock that four brush holders were necessary to prevent sparking under heavy loads.

In order to examine the two bottom holders it was necessary to move around the yoke that carried them. Because the brush holders grounded and frequently flashed over to the iron, hardened beads were burned on these yokes. This of course interfered with their easy rotation when an examination was attempted.

This gave so much trouble that fewer inspections were made than occasion demanded, and electrical trouble was the natural result. Complaints from this source were so frequent and persistent that later-type locomotives were fitted with sufficiently liberal commutators to allow of the installation of two top brush holders. These were in plain view, where they could be readily watched by motorman and electrician.

Controller Is the Heart of the Locomotive

There is an old saying among mine electricians that the controller is the heart of the locomotive. There is much truth in this statement. It is here that the power is distributed to the motors when operating either in parallel or series. Any trouble here means that the operation of the locomotive itself is affected. The inside of the controller is made up of parts intricate yet essential to the proper operation of the motors. It was therefore not surprising that this particular unit would not endure the severe stresses to which it was subjected. This was true at least on locomotives weighing ten to thirteen tons or more.

The turns of the blowout coils were not built with sufficient cross-section, and when the controllers were installed on the heavier locomotives, short circuits and grounding were the result. Also because there were too few turns in the coil it was discovered eventually that the magnetic flux set up was insufficient to smother the heavy arc which resulted from the great amount of power which the heavier machines consumed.

Thus the demand for a more rugged type of controller soon became so insistent that a change was made. The general arrangement of the improved controller was the same as that of the old with the exception of a few small details. The alterations that went farthest toward making them stand up in service were simply heavier contacts and heavier finger bases.

Next in order after the controller naturally came the resistance. Only those who have had experience with what was known as the pressed-ribbon type can appreciate the advantages of the cast-grid variety now used. The pressed-ribbon resistance was an inclosed affair with no means for heat radiation. As probably a half dozen different kinds of panels went to make up one set, there was strong liability that a panel having a wrong resistance would be installed. This occurred time and again, and resulted in quickly burning out the resistance.

The cast grid with its uniform resistance in each panel has only to be connected in series or parallel to give the proper starting voltage to the motor. As these grids are open, excellent means is afforded for the radiation of heat. The present method of holding the panels in place is much superior to the old. Hardened bricks with end indentations (slots) were used to hold the pressed ribbon firm. When these bricks broke, as they often did, a half mile of ribbon might be strewn along the mine road. Sometimes the whole of the resistance would be lost in this way before the mishap was discovered.

The ribbon could not be reclaimed and was of course a total loss. The cast grid cannot give this trouble, as each section is provided with a hole in either end through which a mica tube, reinforced by a steel rod, is passed. When this resistance is assembled it forms a compact whole with no possible chance of separation. Probably no resistance yet devised will endure hard mine service as well as will this one.

Commutating-Poles Save Much Sparking

When the motor itself is considered one is confronted with a number of important improvements tending to keep the locomotive in continuous service. The motor, of course, is the most delicate as well as the most useful part of the entire mechanism. Many mishaps may befall it that cannot be repaired even temporarily, and which consequently put the locomotive out of commission.

Only within recent years has the commutating-pole motor been perfected to the point where it has become of practical value. Even after it had been successfully tried out on all kinds of direct-current motors some hesitation was felt about embodying it in the mine locomotive. Today, only a few years after its intrduction, electrical men around coal mines are unanimous in declaring that the commutating pole was an improvement which the locomotive greatly needed.

Motor-Driven Versus Chain-Driven Reel

Not the least important of locomotive improvements was the motor-driven reel. Its predecessor, the chain-driven reel, was never satisfactory, as under certain circumstances the cable would be pulled under the drivers and a large amount of it destroyed. Something that would be free from any action of the locomotive wheels was desired. A 2-hp. motor having a resistance of about twenty-six ohms directly in series with it was finally introduced and met with instant favor. This motor exerts a pull of about 25 lb. on the cable and thus tends to keep it off the ground.

It is obvious that this motor must be extremely durable, for it is subjected to the severest kind of service. When the locomotive upon which it is installed is coming out of a chamber this motor simply drives a reel which in turn picks up the cable. If its duties

consisted only in driving a cable reel through a set of gears there probably would be no need for extra insulation and the precaution of cutting down the line voltage, but there are other demands made on the motor.

Still Holds While Locomotive Is Standing

In order to keep a uniform tension of 25 lb. against the cable there must be impressed on the motor terminals a potential of 119 volts, regardless of whether the motor is operating or standing still. When the locomotive has reached the inner end of the miner's chamber there is in most cases a delay of several minutes during which the power is not thrown off. The stand-still torque of the motor is then sufficient to exert the necessary pull. Of course if the delay at the chamber is indefinite the reel switch is thrown to the off position.

When power is on, however, no counter electromotive force is generated and all that holds the current flow within reasonable bounds is the resistance of the circuit. It is not difficult to see why the current flow would be dangerously high at such times if this motor were constructed in the ordinary manner.

The first armatures sent out with these reel motors were of the ring type and they were not any too efficient in consequence. Winding of these armatures also was difficult. Before long, however, an armature was made with form-wound coils, and this type is in use today. The recent addition of ball bearings to the revolving parts makes this locomotive still more durable.

One Locomotive Serves Twenty-Five Places

It is a sufficient testimonial to the ruggedness of this locomotive to say that in the anthracite region most of them are taking care of from twenty to twenty-five chambers a day, and that these chambers are entered anywhere from three to five times. Most of these chambers are 500 to 600 ft. long and in addition are quite steep. Naturally, it is the man on the job, who comes in daily contact with these little motors, who is in the best position to understand and appreciate their full value.

It would be a mistake to bring an article of this kind to a close without making some mention of the ball bearing, as it is being used on the mine locomotive in general. I doubt if the true value of this bearing is fully appreciated. This device is compelled to endure abuse to which the old sleeve-type never was subjected, simply because it was well known that it would not stand up under such treatment. A motorman whose locomotive was equipped with the sleeve type of bearing soon learned that to run it dry meant that an armature was on the poles. He accordingly made provision against this occurrence.

Ball Bearings Protected the Windings

With the introduction of the ball-bearing armature there were new things to learn. One of these was that a dry ball bearing did not necessarily mean that the armature was rubbing. Some warning, fortunately, such as excessive heat, is given, and the trouble is discovered before the armature reaches the pole pieces. The bearing is ruined, of course, but the winding is not destroyed, as would have been the case if the bearing had been of babbitt.

It is utterly needless for an armature equipped with ball bearings to go down onto the poles, and it is a careless motorman indeed who will allow the bearing to get in such condition as to permit this to happen. Because they require less attention than the babbitt bearing is no reason why they should be subjected to abuse of any kind. Unfortunately when they do "go bad" they cannot be reclaimed. This is, however, merely an added reason why they should be kept lubricated at all times.

To one who has made a close study of mine locomotives they seem marvelous in many ways. The work they have to do must not be compared to that performed by similar equipment on the outside. The roadbed over which they operate must of necessity be rough and uneven, for conditions are all against perfect ballasting. In many cases, especially in the anthracite region, this road-bed is laid over ground that is caving, and the track is irregular in consequence.

While the efforts of all concerned are directed toward perfect track conditions, attainment even in part seems to be a hopeless task. Only the improvements noted above have kept these machines in service throughout a score of years. Of course, the obstacles encountered have brought the weaknesses in construction to the surface and finally paved the way for their proper rectification.

"Motor" More Dependable Than "Lokie"

One more thought will not be amiss. As a comparison to the work of the electric locomotives let us consider the duties performed by the steam "lokie" on the surface. This work is not so gruelling in nature and has the added advantage of being performed on a much better roadbed and under the watchful eye of the official in charge. Yet it is an undisputed fact that 90 per cent of these steam locomotives are taken into a repair shop several times a year for a complete overhauling.

How much of this kind of work is done on electric locomotives? Very little. True, they are taken to the pits at frequent intervals for the renewal of wheels, resistance or controller parts, brakes, etc., but the steam locomotives go through a similar process quite as frequently while in addition they receive the benefit of a complete repair-shop overhaul.

Here's to the mine locomotive, the most abused and yet the most dependable of all coal-mining equipment! It will have a future just as surely as it has had a past, and all appearances indicate that this future will be a bright one. Twenty years from now one will undoubtedly be able to look back at many changes that have come to pass, and where is the person who will be sufficiently foolhardy to assert that the improvements made will not be comparable to the ones recounted in this article? As in the past, increased difficulties in mining will be the main contributing factor in bringing these improvements about.

Hard-Coal Miners Would Name President

ARGUING that it is time the anthracite field had a man in the presidential chair of the international United Mine Workers of America, the union leaders of the hard-coal region are supporting Thomas Kennedy, of Hazleton, as successor to John L. Lewis, of Ohio, when that functionary's time expires. Lewis beat Kennedy for vice-president at the last election and replaced Frank J. Hayes as president when he became incapacitated. In view of the split in the bituminous regions Thomas Kennedy's supporters are quite hopeful of presidential honors for their candidate.

Great Britain's Cabinet Seeks Substitute for Discredited Nationalization Scheme

This Plan Does Not Please the Workman, for Under It Prices Must Still Be Competitive and Variant, and So Long as Wages are Dependent On Unequal Prices They Cannot Be Uniform for Which Uniformity the Mine Workers Have Long Hoped

By W. W. Wallace
York, England

COAL is a burning topic in Britain. After many months the Cabinet (Government) has finally decided upon its policy and has incorporated it in a bill which was brought before Parliament a few days ago. In introducing it, the president of the Board of Trade stated that the bill would bring about "a state of harmony in the coal fields such as had not been seen before," and one of the coal owners declared that the bill would "strangle the coal industry with red tape." The miners' leader pleasantly remarked that if the Government "wanted chaos in the industry" it could go on with the bill. Proposals which call for such varied comment must be worthy of notice.

In Great Britain the best coal is generally extracted with the least effort. In consequence wages vary immensely, seeing that all the coal that can be mined is needed and a mine which is worked at the expense of much labor is not closed down but worked at the expense of labor and profit. In the United States the most expensive coal to mine is anthracite, which commands a big price on the market, while the lower grades of coal if not cheap enough to meet competition need not be mined. Consequently wages are reasonably uniform and the call for nationalization is neither as loud nor as excusable as is that heard demanding it across the water. As state ownership has been a failure in Great Britain only the prospective employees of the state want it.

First, a brief statement of the problem. Britain's industrial future depends largely upon coal. The annual value of the coal produced is about £440,000,000 ($2,142,800,000 at normal rates of exchange). The number of men employed in the industry is 1,180,000. Almost 100 per cent of the manual workers are organized in the Miners' Federation of Great Britain, probably the strongest trade union in the world. Working in conjunction with it are the railwaymen and the transport workers, forming together the formidable "Triple Alliance."

The first plank in the platform of the miners' union for some years has been that of nationalization. The demand was suspended duing the war, but revived immediately after the armistice. Faced with the prospect of a disastrous strike at a critical time, the Government offered to appoint a royal commission to inquire into the whole question of wages and hours and the future of the industry. This offer was accepted by the miners and a commission appointed under the chairmanship of Justice Sankey (one of the ablest High Court judges, possessing special knowledge of the industry).

The commission presented an interim report on wages and hours which was adopted by the Government. The final report dealt with nationalization. The chairman of the commission joined with the miners' representatives and the other labor men on the commission in recommending nationalization. Sir Arthur Duckham, one of the independent employers, recommended a scheme of unification under which private enterprise would be retained but profits would be limited and the miners given a share in control including representation on the boards of directors. The coal owners on their part not only refused to consider nationalization for even one moment but declared further that they would not agree to give any share whatever in the control of the industry to the miners. That was the situation with which the Government had to deal.

Ministers to Fix Wages, Prices and Profits

The policy adopted is contained in the Ministry of Mines Bill. This bill creates a Minister of Mines, whose duty it will be to effect the most efficient development of mineral resources and the safety and welfare of the miners. He is to appoint an advisory committee representative of all the different interests. For one year from Aug. 31, 1920, he is to have power to regulate coal exporting and bunkering, and to fix prices for bunker coal and for the home trade. When such regulations are made he is to have power also to fix wages and profits. After Aug. 31, 1921, such powers may be exercised only if authorized by express resolutions of both houses of Parliament. He is given, in addition to these more or less temporary powers, the right "at any time" to put into force any recommendations submitted to him by a district committee, an area board, or the National Board, which bodies may now be described.

Pit Committee of Operators and Miners

The Minister is to make regulations setting up different representative bodies. First of all, every coal mine is to have a "pit committee." This is to consist on one side of owners and management and on the other of an equal number of miners' representatives selected by and from themselves. Its functions are to discuss and make recommendations with regard to (a) safety, health

and welfare; (b) the maintenance and increase of output; (c) certain reports from Government inspectors; (d) disputes arising in the mine in question, including disputes as to wages, and (e) any other questions prescribed by the regulations.

District committees are similar joint bodies representing a specified district. How they are to be elected and whether or not election is limited to members of pit committees is not stated. They are twenty-four in number and their functions are to consider similar questions in so far as they affect the district. They are also to consider questions referred to them by a pit committee, an area board, the National Board or the Minister of Mines.

Six area boards also are created, three for England and one each for Scotland, Ireland and Wales. The representatives of the owners and management are to be nominated by the representatives of owners and management on the various district boards and similarly in the case of the miners' representatives. Their functions are to deal with questions affecting the whole area. In particular they are to formulate at such intervals and on such principles as may be prescribed by the National Board schemes for "adjusting remuneration of the workers within the area, having regard to the profits of the industry within the area," such schemes being submitted to the National Board and the Minister for their approval.

National Board Surveys Work of Others

The National Board is a similar body representative of the whole Kingdom. Its business is to consider questions affecting the industry as a whole and in particular those referred to it by area boards or the Minister. It also is to deal with workers' remuneration, as mentioned in the previous paragraph.

This being the scheme, what does it amount to? It recognizes that the day of absolutely free private enterprise in coal mining in Great Britain is done. It grants the right of the consumer to an interest in the conduct of the industry, through the Minister and through representatives on the Advisory Committee. It admits the right of the producer to some share in control. But the miners say, and probably they are right, that the heart of the bill is to be found in the provisions that their remuneration is to be based on the profits of the areas.

For forty years the miners have been fighting for the principle of a uniform, standard wage throughout the Kingdom. It is a generally recognized principle that no large organization can keep together without unity of aim. That applies with special force to trade unions. The coal fields of Britain vary greatly in productivity as well as efficiency. Wages have varied accordingly. Miners in South Wales have been better paid than their fellow workers, say, in Somerset; miners in Northumberland than those in Scotland, and similarly all over the country. So long as this continued, solidarity of action was obviously difficult and the policy of the Miners' Federation was to alter it.

Since the outbreak of the war and particularly since the armistice the miners have been demanding and receiving flat-rate increases in wages over the whole country instead of percentages, with the result that wages have been growing more uniform. This policy has been made possible only by reason of the fact that the industry has been under Government control and that consequently the surplus profits of the more productive areas have been available to make good the losses in the less productive areas. It is the clear recognition of this fact which has provided a large part of the driving force behind the demand for a more advanced form of control in the shape of nationalization.

The Government now refuses to entertain the idea of nationalization, and proposes the removal of control in twelve months' time. If this policy is carried through one of three things must happen. Either (1) all wages must be reduced to the figure which the least productive coal field can afford to pay, (2) the less productive coal fields must be closed down, or (3) wages must vary from area to area. The last is the alternative provided for in the bill. Indeed it would seem to be the only practicable alternative to nationalization.

The miners on their part seem determined to fight the proposal and to stand for nationalization. They have presented demands (1) for the reduction of the price of household coal by 14s. 2d. per long ton ($3.08 per short ton, normal exchange), and (2) for a uniform increase of 2s. (49c., normal exchange) per shift worked. If successful this would mean, as I have tried to show, that the less productive coal fields would have to depend upon the profits of the more productive.

In other words, private enterprise could not continue. Both sides seem equally determined. The miners are over a million strong, they are almost "blackleg" proof, they are skilfully led, they are producing a vital commodity, and they have the backing of the more important sections of the organized labor of the country. On the other hand, the Government's rallying call will be that the whole community is being attacked. If the matter comes to a final issue it is difficult to see how something approaching civil war can be avoided. That is the true significance of the Ministry of Mines bill.

Coal and Coke Exported by Customs Districts During June

DOMESTIC exports of coal and coke from the United States by customs districts during June, 1920, according to figures issued by the Bureau of Foreign and Domestic Commerce, are given herewith:

EXPORTS OF COAL AND COKE IN GROSS TONS

Customs Districts:	Anthracite	Bituminous	Coke
Maine and New Hampshire	19	40	134
Vermont	2,257	3,353	30
Massachusetts	228	.....	.....
St. Lawrence	169,871	176,808	2,494
Rochester	87,349	91,651	.....
Buffalo	221,556	167,480	20,058
New York	8,008	5,090	337
Philadelphia	11,760	218,176	440
Maryland	.....	602,739	1,479
Virginia	6,423	1,022,603	653
South Carolina	.....	71,548	.....
Georgia	.....	8,875	.....
Florida	719	1,309	..
Mobile	.....	470	.....
New Orleans	703	1,131	63
Sabine	.....	18	.....
San Antonio	138	1,067	415
El Paso	24	3,474	4,079
San Diego	2	3	.....
Arizona	.....	1,983	7,191
San Francisco	45	.....	353
Washington	39	2,436	101
Dakota	788	631	310
Duluth and Superior	2,019	2,229	100
Michigan	.....	132,103	15,083
Ohio	3	617,036	2,100
Totals	511,951	3,132,253	55,420

BUNKER COAL
Customs Districts

Maryland	110,064
New York	283,049
Philadelphia	31,484
Virginia	261,252

Good Briquets Made of Oklahoma Coal with Crude-Oil Residue as a Binder*

Ascertained That Wheeler Crude Oil Should Be Reduced by Distillation to 15 Per Cent of Its Original Weight and Pressure of 2,000 lb. Per Square Inch Used—Mix Should Be Between 180 and 200 Deg. F. and Moisture 3 to 5 Per Cent

BY J. C. DAVIS
Norman, Okla.

TESTS were recently conducted at Oklahoma University to determine whether certain Oklahoma coals—those from the Lehigh and McAlester-Wilburton fields—could be profitably briquetted, using a crude-oil residue, and while the process is not new, some interesting data were obtained during the procedure.

The U. S. Bureau of Mines some time ago made extensive researches on the subject of briquetting and briquetting materials in its plants at Norfolk, Va.; Pittsburgh, Pa., and St. Louis, Mo. Binders of various kinds were tried, including both inorganic and organic materials. Among the inorganic materials utilized at various times were clay, lime, magnesia, magnesia cement, plaster of paris, portland cement, natural cement, slag cement and water glass.

Briquets did not smoke more than coal from which they were made, and burned readily. They did not soften, disintegrate or fall through the grate. Washed-coal briquets did not clinker; those from unwashed coal did. The former had a heat content of 12,570 B.t.u., while the washed coal from which they were made ran 12,200 B.t.u.

TESTS AT OKLAHOMA UNIVERSITY

Some of the organic materials experimented with were wood products, such as rosin, pitch and pine tar; sugar-factory residues, such as beet pulp, beet-sugar molasses, and cane-sugar molasses; starches, tars and pitches from coal, such as blast-furnace tar, producer-gas tar, coal-tar creosote and various grades of pitches from various tars; natural asphaltum and petroleum products such as crude oil and crude-oil residue. Any one interested in these results may find a complete summary of the experiments in Bulletin No. 58 of the Bureau of Mines.

The experiments, made in the materials testing laboratory at the University of Oklahoma, were conducted by C. T. Griswold, mining engineer for the Atchison, Topeka & Santa Fé R. R., assisted by myself, and it is with his permission that the data given herein are made public. After consulting the bulletin to which reference has been made it was assumed that a standard mixture should be made of 90 per cent moisture and a 7 per cent binder. The coal was then ground and thoroughly washed to rid it of slate and other impurities so far as practicable.

In order to carry out the tests a hollow cast-iron mold was made measuring approximately 4¾ x 4¼ x 2¾ in., with a central hole of about 1¾ x 2¼ in. and with rounded corners. A base plate was made so as to have a projecting rim extending into this opening from the under side. A plunger, sufficiently long to compress the coal, passed down through the opening from the upper side. The mold was then filled with the coal and binder; the plunger was placed in position and the mold put under the compression head of the 100,000-lb. Riehle testing machine resting on the self-adjusting lower head. Due to the roughness of the casting, trouble was experienced in getting the briquets to come free from the mold, and it was decided to have the entire inside of the mold finished, together with the projecting portion of the base plate and the plunger. The briquets then came out freely, perfect in shape and of a size to give a weight of approximately 2¼ ounces. A number of experiments were then made to determine the best pressure to use. Pressures were tried out varying from 1,000 to 5,000 lb. per sq. in. The former pressure seemed too low to compress the binder properly into the coal. At a pressure of about 2,000 lb. per sq. in. the materials seemed to unite very satisfactorily. An increase to 3,000 lb. per sq. in. did not seem to improve the binding qualities materially and with pressures above this amount the particles of coal were crushed. It was therefore assumed that 2,000 lb. per sq. in. would be the proper pressure to use in the briquetting work.

ASPHALT BINDER MELTED AT 160 DEG. F.

The binder used was a Wheeler crude oil. Tests were first made to see to what degree it should be distilled in order to produce a satisfactory binder. The oil was reduced to 50 per cent of its original volume and continued by 10 per cent reductive steps down through 40, 30, 20 and 10 per cent. A briquet was then made with a binder having 15 per cent of the original volume, and it was found highly satisfactory. Briquets were formed using 5, 6, 7 and 8 per cent of each binder. Until the 20-per cent reduction was reached all the briquets were soft and could be easily crushed in the hand, even after they had been given sufficient time to cool completely and thus to become hard. The briquet with 10 per cent of binder seemed too hard and rather brittle, while briquets made from the 15 per cent were excellent.

The distillation test furnished by the oil company showed this crude oil to contain an asphalt base of 36 per cent—10 deg. penetration. The laboratory check made at the university showed the following:

*Abstract from a paper entitled "Some Investigations in Briquetting Oklahoma Coal," presented before the chemists' and engineers' meeting at Tulsa, Okla.

STEAM DISTILLATION ON BASIS OF DEHYDRATED CRUDE

	Per Cent
Kerosene distillate (40.5 deg. Bé.)	2
Gas oil (34.3 deg. Bé.)	14
100 viscosity (at 100 deg. F.) lubricating oil	21
Fuel oil (calculated)	43
Residue	15

A binder was then made by the Cameron Refining Co., at Ardmore, Okla., to meet these specifications, and it was found to check with the above distillation test. Further tests by the New York penetrometer on this binder registered penetration 26 at 25 deg. C., 50-g. weights being used for five seconds. The melting point as shown by the ball-and-ring method is 126 deg. F. These tests led us to make the following final specifications:

The asphalt binder must have a penetration of 20 and a melting point of 160 deg. F. Otherwise it will not withstand the excessive summer heat of this section. It is safe to assume that any other asphalt answering these specifications would be equally satisfactory for use. It may be necessary in any case to require a slightly higher melting point.

Slack and Dust in Proper Proportions

The coal used in all these tests was ground to pass a 10-mesh after studying the action of ¼-in. to 60-mesh. The 10-mesh did not seem to crush under pressures sufficing for the manufacture of a satisfactory briquet. The samples used were made from all coals passing a 1¼-in. round-hole screen and contained both the slack and the finest dust mixed in the proper proportions of 31 to 9. Analyses of these coals showed the following percentages:

PROXIMATE ANALYSES OF COAL BRIQUETTED

	Lehigh Unwashed	Lehigh Washed	Average Slack of McAlester Wilburton
Moisture	2.30	2.79	2.04
Ash	19.54	12.10	10.93
Volatile matter	31.20	31.23	35.83
Fixed carbon	48.04	53.32	53.23
B.t.u.	10,710	12,200	

Calorimeter tests on the finished briquets showed that the unwashed samples contained 10,543 B.t.u. and the washed samples 12,570 B.t.u. Washing appears to increase the heat content about 20 per cent.

Rolling and Dropping Tests Successful

Temperature and moisture variations were tried throughout the tests. The variations in temperature lay between 60 and 450 deg. F. and the moisture variations between 3 and 10 per cent. It was found that the best results were obtained when the temperature was kept between 180 and 200 deg. F. When coals of moisture content between 3 and 5 per cent were used the difference in the quality of briquets seemed to be small, but when 5 per cent was exceeded the briquets showed voids and crushed much more readily.

Some of the briquets were subjected to rolling and drop tests. Twenty pounds of the briquets made from unwashed coal were placed in an oil barrel, and the barrel rolled over the rough ground for two minutes at 32 r.p.m. These briquets showed a loss in weight of 3½ per cent. Some of them were then dropped from a height of six feet three times onto a concrete floor and showed a loss of 1 per cent from this test. The washed briquets, then subjected to the same treatment, showed losses of 1½ per cent from rolling and ½ per cent from dropping.

None of the briquets of either kind were broken into parts, the losses being due to breaking of the edges and corners. The height of the drop was then increased to twelve feet, and the briquets were then broken into parts only on the third drop, showing in all cases clean-cut cleavage planes. Any of the briquets tested were sufficiently strong to withstand the pressure of a man's weight, as was shown by placing them on the floor and stepping on them.

Results of Test in Heating Stove

As the "test of the pudding is in the eating," so the test of the fuel is in burning. A fire was made in an ordinary round heating stove having ¾-in. grate openings. The fire bed was eight in. deep. Both kinds of briquets kindled readily, burned freely, made no more smoke than an ordinary coal, and did not soften, disintegrate or fall through the grate bars during the process of combustion. The washed coal briquets, however, made a much hotter fire. The unwashed left a refuse of 28.7 per cent and clinkered badly, leaving a hard consolidated clinker. The washed coal briquets left a refuse of 11.6 per cent and showed only a small amount of soft clinker.

These tests show beyond doubt that Oklahoma soft coal of the above grades can be successfully briquetted, will make a cleaner domestic fuel than the ordinary bituminous coals, and to a remarkable degree will stand handling and rough usage. As a locomotive fuel they would no doubt prove satisfactory. The initial cost for a plant to make briquets of a desirable kind is high, but it is believed that these briquets can be made at such a cost that they can be sold at a price no higher than the better grades of bituminous coal and will give greater satisfaction to the consumer.

Gillespie Makes 5,000-Ton Hoisting Record

DURING the month of June Mine No. 3 of the Superior Coal Co., Gillespie, Ill., broke all its previous records for a month's run. During that month the hoisting time was 22⅞ days and the total output raised amounted to 110,103 tons, making an average of slightly over 4,813 tons per working day.

On June 9, 12, 29 and 30 the coal lifted ranged from 5,020 to 5,140 tons, with an average of 5,098. On these days the number of cars hoisted averaged three per minute, the lift from bottom to dump level being 365 ft. The hoist is a Litchfield 24 x 36-in. engine raising Olson cages. The hoistmen, George Klein and Fred Hoppe, change places every hour. Seventeen locomotives and four mules transport the coal underground. Cutting is done by Sullivan and Jeffrey machines, and the coal is loaded out by 392 men. In making the above record much credit was due to rapid caging and discharge rather than to the size of the mine cars, these averaging 6,700 lb. each.

The above output of over 110,000 tons breaks the record for this mine and for the county. F. S. Jorgenson is general superintendent, P. H. Shanahan, superintendent and James Powell, mine manager. The operation is now thirteen years old. (For another interesting record of production see *Coal Age* of March 20, 1920.)

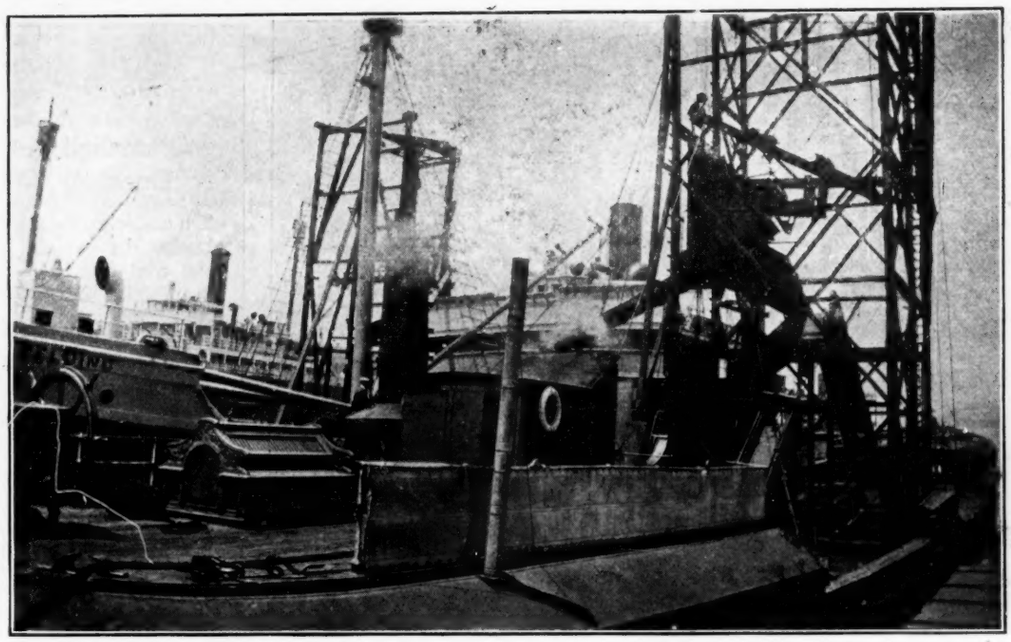


FIG. 1.

Loading Bunker Coal

A barge 195-ft. long, 40-ft. beam and 11-ft. draft meets ocean liners and fills their bunkers with coal. The tower is operated by a 65-hp. engine and the trolley is actuated by a separate machine. One man handles both engines from the tower.

San Francisco Develops as a Coaling Station

Newly-Installed Barges Can Deliver Coal at the Rate of 150 Tons Per Hour—Labor of Coaling Is Reduced to a Minimum by Design of Barge to Fit Clamshell Operation

BY CHARLES W. GEIGER
San Francisco, Cal.

IMPROVED bunkering facilities at San Francisco are attracting steamships to that city. Some are going to Oriental ports, others are on their way to New York, Philadelphia or some other Atlantic port, while still others are proceeding north or south along the Pacific Coast. Shipping men say that steamers get better coal and in much less time at San Francisco than anywhere else on the Pacific.

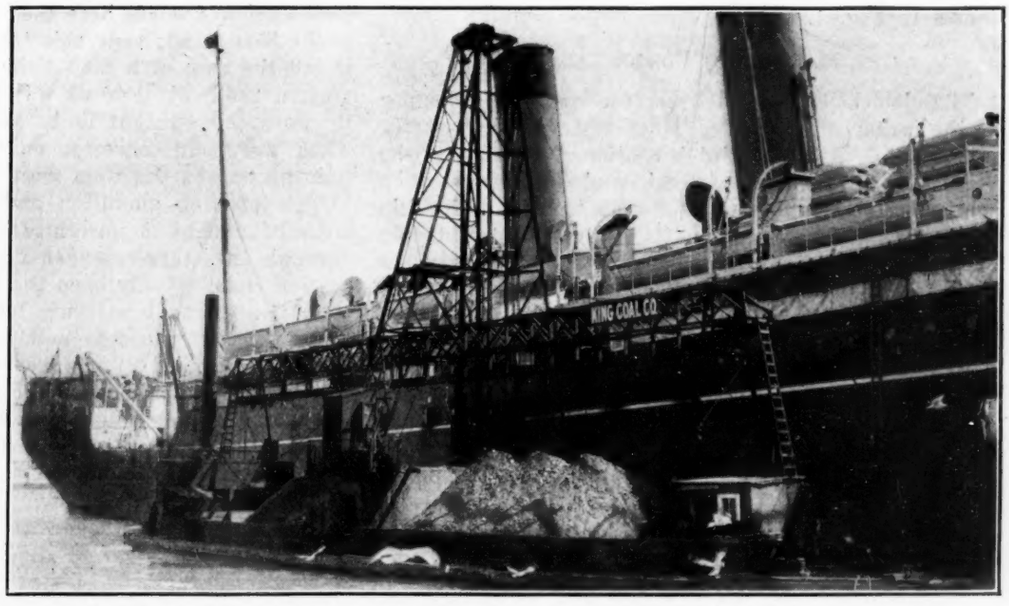
The Rolph Coal Co. operates extensive bunkers at San Francisco, while the King Coal Co. has its storage yard at Oakland. At this latter point about 100,000 tons of coal are kept as a reserve at all times. Both concerns operate an extensive fleet of coal barges that can fuel steamers either in the stream or alongside while the vessel is loading or discharging.

It was the impression in shipping circles for some time that vessels coaled at San Francisco on the theory that the "longest way round is the shortest way home." As a matter of fact, however, vessels do not come to this port merely because of the superior service but

FIG. 2.

Coaling a Big Liner

Barges can discharge coal at a rate of 50 tons an hour. One has a capacity of 800 tons. The coal is lifted by a clamshell bucket which is suspended from the traveler, carried to the tower and thence discharged into the waiting vessel.



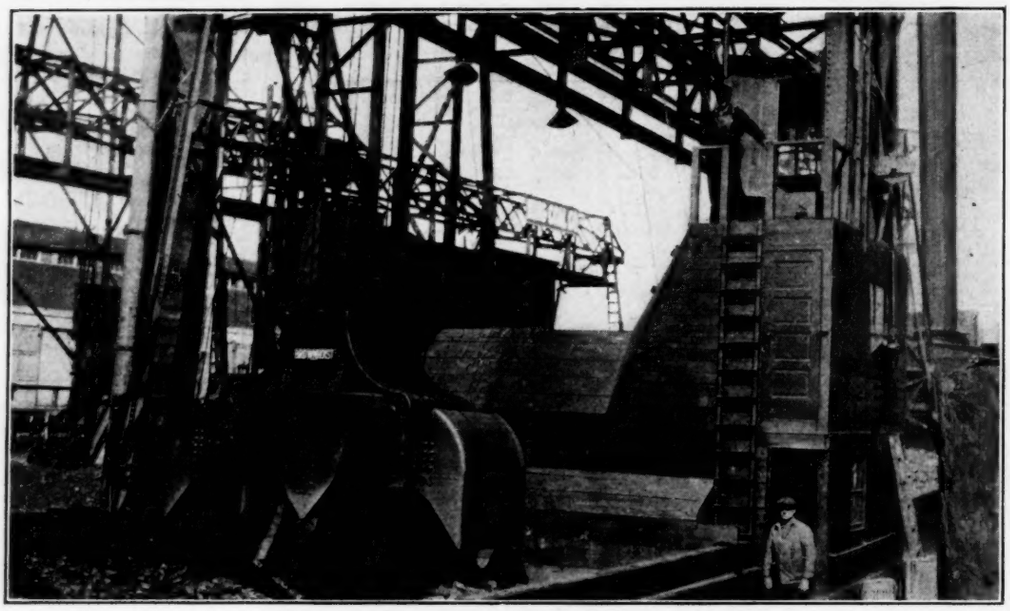


FIG. 3.

Clamshell Bucket

The clamshell bucket by which the coal is lifted from the barge and run out to the tower has a capacity of two tons and a spread of 18 ft. As the barge is suitably shaped the bucket will clean the coal out completely without hand shoveling.

because it is a point on the shortest route between the Atlantic and the Orient. The distance from New York to Yokohama by way of Honolulu is 10,108 miles; from New York to Yokohama by way of San Francisco, 9,810 miles. The difference in steaming in favor of San Francisco is thus 298 miles.

Two of the barges of the King company have recently been equipped with up-to-date mechanical devices for rapid bunkering and each can discharge coal at the rate of 150 tons an hour. These barges are shown in Figs. 1, 2, and 3. The Nanaimo, one of these barges, has a coal capacity of 800 tons and is equipped with a Brown 2-ton clamshell bucket with a spread of 18 ft. The bottom of the barge is so shaped that this bucket can pick up all the coal and leave the bottom clean without the employment of shovelers.

This barge is 195 ft. in length, has a 40-ft. beam and a draught of 11 ft. loaded. The traveler is 20 ft. in height and is supported at both ends of the barge by steel girders. A 65-hp. engine operates the bucket, while the trolley is actuated by a separate machine. One man handles both of these engines from the tower shown in Fig. 1.

One Man Tends Boiler and Hoist

The clamshell bucket delivers the coal into a hopper at the center of the barge, whence it runs by gravity into a skip. At this point is stationed a weigher who weighs each skipload of coal, and by means of a semaphore signals the engineer when to hoist. The skip is so arranged as to dump its contents automatically at the proper height into a chute which delivers the material into the ship's bunker.

The engineer handling the skip also acts as fireman, the boiler room being at the forward end of the barge. The boiler is of the Scotch marine type of 150 hp., working at a pressure of 140 lb. Three-inch steam pipes extend under the deck to the engines operating the bucket, the trolley and the skip. The latter rests on a hydraulic bumper, thus eliminating the possibility of damaging the scales. The steel tower in the center of the barge is of such height that the skips can be raised vertically 60 ft.

Five thousand gallons of fresh water is carried in tanks forward, for supplying the boiler. A Westinghouse generator also is installed and produces current for lighting the barge at night. The generator is of 4-kw. capacity, the lights are 300 cp. and are provided with reflectors, which floodlight the entire barge.

The second barge operated by the King company is equipped with similar apparatus, and it is proposed to provide two additional barges with the same mechanical equipment.

As the British Coal Industry Looks to a Mining Man

Great Britain Has a Patchwork of Wages—She Looks Back Forty-One Years for Some of Her Basal Scales and Thirty-Two Years for Others

QUOTING Carlyle's melodramatic language about the mine worker, H. F. Bulman, a mining engineer, writes an interesting, yes and, after all, a sane book on "Coal Mining and the Coal Miner."* In case you have not read Carlyle's words here they are: "Venerable to me is the hard hand; venerable too is the rugged face. Is it not the face of a man living manlike? Hardly entreated brother! For us was thy back so bent! For us were thy straight limbs and fingers so deformed! Thou wert our conscript on whom the lot fell, and fighting our battles thou wert so marred."

This opening quotation and two frightful illustrations of miners in unsightly Weg apparatus crawling through the stage-managed disarray of an apparatus-testing chamber only open the book, they do not typify it. It starts with striking words and startling illustration, but it proceeds with the due deliberation and sober reflection of an engineer. One wonders if Methuen & Co., Ltd., the publishers, are not responsible for these two pages, which would draw readers and purchasers for the books if, as is the British practice, they were deftly opened at the points indicated and duly exposed in some bookseller's window.

It is the same author who records that, despite the

*Pp. 333 + 5 index; 22 illustrations; 5¾ x 9 in.; cloth boards. Methuen & Co., Ltd., 36 Essex St., London, England.

unsanitary surroundings of cottages built in 1802, with rooms small and low and windows as a rule that would not open and open sewers running past the doorways, which must be crossed by all going in and out, with but two rooms to a family, however large the family might be, and the newly married with but one room, no less than thirty sexagenarians were employed in the pit and "several men of seventy years or more were still at work."

Many are the interesting facts which Mr. Bulman collates for us. He shows us how by five-year periods from 1894 the tonnage per person employed per year in the United Kingdom has run as follows: 1894-1898, 367 tons; 1899-1903, 372 tons; 1904-1908, 363 tons and 1909-1913, 328 tons. But the last five years includes 1912, when there was a six-weeks' national strike. The average for the other four years of the last quinquennial period was 333 tons, 30 tons less than for the preceding five years and 42 tons less than in the five years preceding that. Not a cheering condition, for, as Mr. Bulman shows, Germany and the United States produced more per man in 1912 than in 1902 and the United Kingdom less.

In 1915 the hewers of the County of Durham averaged daily 3.4 tons per man and in 1919 2.7 tons. The minimum wage increased 123 per cent and the output per hewer dropped 20 per cent.

Sometimes Only a Third Produce Coal

The reason why coal is so expensive is partly explained by the large number of men engaged in doing other work than strictly mining. One Welsh steam colliery group had only 36 per cent of its men mining and loading coal; 28 per cent were "repairers," working mostly when the colliers were out; 18 per cent were "traffic men" and 2 per cent were officials. The other 16 per cent consisted of surface men. But in Durham the hewers or coal getters form 56 per cent of the total.

Wages are fixed as percentages of the rates which were being paid in certain years long since past. Thus in the Federated Districts (comprising Yorkshire, Lancashire, Cheshire, Derbyshire, Nottinghamshire, Leicestershire, Shropshire, part of Staffordshire, Warwickshire and North Wales) and in Scotland the basing date is 1888; in Northumberland and Durham, November, 1879, and in South Wales and Monmouthshire, December of the same year.

The increases over these basal rates are large. In 1916 Northumberland exceeded its 1879 figures 120 per cent and Scotland its 1888 figures by 150 per cent. But this is not all, for on Sept. 17, 1917, a special advance was given in the shape of a war wage of 18d. (36c.) a day to all colliery workers (male and female), including apprentices 16 years of age or over, and 9d. (18c.) a day to those under 16 years.

This bonus was given to men whenever they were ready and able to work whether the mine was able to work or not. Lack of trade or a shutdown of the mine for repairs did not prevent the operator from paying this minimum. The minimum wage, however, was something apart from this, and men often regarded it as large enough for sustenance and so forebore to do their best, relying on the fact that they were assured of a minimum in any event.

Here it may be said that the date line of the preface of Mr. Bulman's book is July 2, 1919. The book is marked as being first published in 1920 but there are earmarks that the wage section of the volume is not as recent as the preface would indicate and perhaps the latest date given is November, 1918.

In speaking of the sliding scale in which wages are fixed in accord with the selling price he says: "The regulation of miners' wages by the selling price of coal . . . has a serious drawback in its tendency to limit the output of the miner, because an increased supply tends to lower the selling price. It is mainly with securing a high rate of wages that the miners' unions have adopted the deliberate policy of restricting output."

In its account of the accidents and diseases (also somewhat behind date, doubtless for good reasons) reference is made to nystagmus, and the author says "It is worth noting that at several large collieries there has been a marked decrease in the number of cases of nystagmus since the introduction of electric safety lamps in place of the safety lamps that burn oil."

The statistician of the United Kingdom has an advantage over his brother in the United States in his knowledge of the extent to which electric power is used above and below ground at mines. In 1917, 913,640 hp. had been installed. There were 1,739 electrically driven coal-cutting machines. It may be noted that there were 600,919 flame safety lamps and only 146,651 electric safety lamps.

The book does not confine itself to sociological subjects or to statistics; it covers broadly coals and their composition, their distillation products, the laws relating to mining machinery, rescue work and housing. Despite a few references to American conditions, regarding which the author is apparently not widely read, it really may be regarded as a purely British publication. However, if the reviewer is a judge, there is room for such a book in American libraries, and no one will hold the author at fault unless it be for having occasionally trespassed across the Atlantic when he had at home so much to occupy his pen.

Washington Mine Workers Accept Agreement

IT WILL BE remembered that the officials of the United Mine Workers, District No. 10, recently made a tentative agreement with the operators, this contract being subject to the approval of the members of the union. The date of acceptance was Aug. 4 and the agreement carries with it a 20-per cent increase in wages over and above the terms existent prior to the award of the Bituminous Coal Commission.

Broad Top Strike Comes to an End

AFTER being on strike for five weeks 3,000 coal miners in the Broad Top fields of Pennsylvania returned to work early last week, an agreement having been made by the aid of the Department of Labor after two days' conference ending on the evening of Aug. 15.

Indiana Production Drops Owing to Strike

PRODUCTION of coal at 189 mines in Indiana during the week ending July 31 is reported as 157,577 net tons as compared with 473,103 net tons the week preceding. These mines worked 27.67 per cent of full time. Labor trouble was responsible for 67.31 per cent of the time lost, while car shortage and mine disability accounted for 2.29 and 2.73 per cent respectively.

Discussion by Readers

Edited by
James T. Beard

Fire Protection at Mine Tipples

AFTER reading Dever C. Ashmead's splendid article relating to the means taken to afford needed fire protection for the breaker at Colliery No. 4 of the Kingston Coal Co., *Coal Age*, July 15, p. 113, my thoughts have gone back to the few hundred visits I have made to different mine operations, and I can recall but one mine where any special precaution had been taken to guard against fire that might occur at night or, indeed, at any time.

The Brier Hill Coal Co. had installed a two-inch pipeline in their tipple, for the purpose of fire protection. The pipes were drilled with small holes, about one-sixteenth inch in diameter and at frequent intervals. These pipes are placed near the roof and at the sides of the tipple, well out of the way where they will not obstruct the daily operation of the mine.

The whole system is connected to the town water main and controlled by a valve on the ground placed at a sufficient distance from the breaker where it can be readily reached in case a fire should occur night or day. Should this happen, all that would be necesasry would be to open the valve and the entire breaker would be quickly flooded by a giant spray of water.

In the Eastern Kentucky coal field I know of many large wooden tipples that handle the output of several operations, and although the water tanks are conveniently located so that a suitable spray system could be installed at small cost, this has not been done. When making such installations some thought should be given to the proper protection of the electrical equipment in and about the tipple or breaker, if the sprinkling line is to be used from time to time for the laying of the dust to make the working conditions more comfortable. Also, water barrels and fire extinguishers should be provided where they would be immediately available for use at the origin of a fire.

G. E. DAUGHERTY.

Pikeville, Ky.

Shaft To Replace Chains in Mule Haulage

SINCE reading the interesting description, regarding the method employed by the Kingston Coal Co., at Kingston, Pa., *Coal Age*, June 10, p. 1,200, who work a large number of mules in their mines, and have adopted a form of shaft to replace the ordinary trace chain, for hauling cars in the mine, I have been wondering if the advantage gained thereby would be realized under all conditions.

It is stated that the use of shafts provides a rigid connection between the mule and the car, which is under better control on a moderate downgrade. It is also said that the shaft enables the mule to exert a more effective pull on the drawbar of the car. It is possible that there are other advantages besides those mentioned, and I am led to ask the following:

Can a mule with kicking propensities be kept under better restraint by this method of hitching? Again, is the mule less liable to leave the track and less likely to get his foot caught in the angle of the frog?

It does not appear, in the illustration shown on page 1,200 to which I have referred, that any opportunity is afforded the driver to ride on the forward end of the car, as he does with a trace-chain connection where the mule is at a greater distance from the car, permitting the driver to support himself between the car and the mule while standing on the hitching or sitting on the end of the car.

It also occurred to me that the ends of the shafts appear to extend too far ahead of the mule, making it possible for a high-spirited mule of a nervous disposition to injure another mule when making a sharp turn on reaching the sidetrack or parting. It would seem that the shafts could be made shorter or the ends turned downward to avoid such an accident.

With these questions in mind, I sought and obtained the following information, together with a dimensioned drawing, as shown in Figs. 1 and 2, which may be of interest to others who have read the article. There is little doubt that the rigid connection of the mule with the car, afforded by the shaft (Fig. 2), is an advantage in giving a better control of the car on a downgrade that is not too steep for mule haulage. With regard to restraining the kicking propensity of a mule with a shaft hitching, little can be said, except that the direction of the kick will probably be limited, until the fellow kicks over the shaft. It would seem, however, that the driver would be in less danger with a shaft hitching than when trace chains are used There is practically no opportunity for the mule to leave the center of the track when hitched in a pair of shafts, and the danger of his foot being caught in a frog or between the rails of a switch is less.

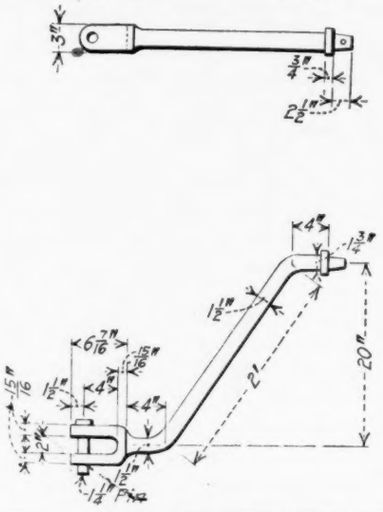


FIG. 1. PLAN AND ELEVATION OF THE SHAFT CONNECTION

In respect to the driver riding on the front end of the car, the shaft connection affords equal or better opportunity for his support than is possible with a trace chain. The distance of the mule from the car can be regulated according to choice; also, the shaft ends can be shortened and rounded or curved downward, as desired, to prevent the possible injury of another mule. The hitching shown in the illustration given in the previous article is said to have given good satisfaction.

In Figs. 1 and 2 are shown the general form and working dimensions of the shaft employed in the Kingston mine. However, these dimensions should be altered to suit any given conditions, respecting the height of the mule and the elevation of the drawbar above the track, the size and weight of the cars hauled and other data that would modify the results. It is stated that the shaft should come to the same height on the mule as

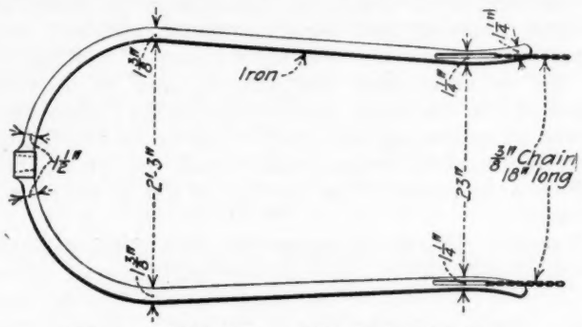


FIG. 2. PLAN OF A SHAFT HITCHING

if he were pulling in the shafts of a single wagon. It will generally be necessary to experiment a little before deciding on the style or form of shaft to be employed. This will doubtless prove of interest in the operation of many mines where mule haulage is employed.

JOSEPH CAIN,
Stearns, Ky. Supt. Stearns Coal Co.

Plain-Bearing Car Wheels Are Frequently Much Underestimated

THOUGH at a late hour, it gives me pleasure and satisfaction to reply to the letter of Richard W. Harris, *Coal Age*, Mar. 4, p. 455, which set forth in emphatic terms that contributor's evident partiality for roller bearings for mine-car use.

Mr. Harris has also taken such a pronounced exception to any of the merits of the plain-bearing carwheel, and to certain claims made in my letter regarding the same, Jan. 15, p. 148, that I feel it is only fair to ask permission to vindicate my previous defense of the use of plain-bearing mine-car equipment, which he has styled as being "antiquated." Moreover, many of Mr. Harris' claims are misleading to one not acquainted with all the facts.

While admitting the truth of my former statement that the large majority of coal mines, in Illinois, are still equipped with plain-bearing wheels, Mr. Harris passes over that fact, by saying simply that these are only the "smaller mines," which does not change the fact nor attempt to explain the reason why those operations have not discarded their plain-bearing equipment for roller-bearing cars.

TYPE OF BEARING BEST SUITED TO CONDITIONS MAY BE DETERMINED BY THE GRADES

The grades of a mine will invariably dictate the type of bearing that is more economical and practical to employ in hauling. There are many mines that have steep grades and sharp pitches to contend with and, as a result, runaways and wrecks are liable to occur in them at any time. These can only be avoided by the maintenance of care and caution on the part of drivers and motormen. Bearing this in mind, we can readily understand the underlying reason why many mines have not made the change to roller-bearing equipment, which presents greater difficulties when these frequent repairs have to be made.

Again, Mr. Harris attaches much significance to the fact that a large exhibitor of roller-bearing equipment, at a recent meeting of the American Mining Congress, in St. Louis, displayed a sign stating that the firm had done more business in their mine-car department, in two-and-one-half months, in 1919, than they had done during the fiscal years of 1914 and 1915.

Now, it would not occur to anyone to deny such a statement or consider it at all strange, when it is remembered how all lines of business were demoralized from the time the war started till the armistice was signed, except such enterprises as were directly involved in meeting the demand for preparedness.

Even the reference made by this writer to the driver who chained the wheels of his wagon to the wagon bed when going downhill, as proving that sliding friction is greater than rolling friction, appeals to me as irrelevant, since he fails to take into account the relatively large leverage of a wagon wheel as compared with a 16- or 18-in. carwheel.

GREASE FOR LUBRICATING PLAIN BEARINGS

In his comparison of the relative costs of lubricating plain- and roller-bearing wheels, Mr. Harris loses sight of the fact that it is very much the custom of the users of plain-bearing equipment to lubricate their wheels with grease instead of black oil or "blackstrap," as it is commonly called. Assuming that all operators of plain-bearing equipment lubricate with oil, he finds that it is necessary to apply the oil at least four times a week when the mine is running.

The equipment in use in a mine must, indeed, be very poor to require this frequent application. When using blackstrap on our carwheels, I have found it necessary to lubricate the cars but twice a week when the mine was running full. The use of grease on plain bearings, at intervals ranging from five and six weeks to three months and more, depending on conditions in the mine and its equipment, would greatly modify Mr. Harris' results and show that the lubrication of plain bearings exceeds but little, if any, that of roller-bearing wheels.

QUESTIONS ESTIMATED COST

Practical miners will question the statement that roller-bearing trucks are being lubricated at a labor cost of 10c. per car. One writer who signs himself, "R," Robertsdale, Pa., states that he uses a grease on plain-bearing wheels, at a cost of $2.46, per car, per year, which is only 46c. more than the estimated cost of lubricating roller-bearing wheels, as given by Mr. Harris. As it is possible that the latter estimated the cost closely, this margin may be still further reduced.

Now, regarding the claim made that flexible roller bearings eliminate the wearing out of the steel hubs of such wheels, the condition must be truly Utopian if such a statement is correct. My experience is that plain-bearing equipment when properly lubricated, gives little trouble on this score, although the hub will wear out in time if the tire is sufficiently durable. In my experience, the latter is a greater source of failure in carwheels wherever there are heavy grades.

Speaking of broken wheels, it is quite true that less than five per cent of these are the result of wrecks in the mine; but the expense and trouble of replacing

roller-bearing wheels having worn-out tires is the same as when the wheel has been broken in a wreck; and, as I said before, this is one of the chief causes affecting the life of the wheel.

One point in the claim of Mr. Harris regarding the percentage of power saved in the use of roller-bearing equipment is quite misleading because it refers to the haulage on level track and makes no allusion to the decrease in the saving of power as the grade of the road increases. On a level track, the tests referred to by Mr. Harris show a drawbar pull of 24.3 lb. per ton for plain-bearing cars, as compared with 12.8 lb. per ton for roller-bearing equipment, showing a saving in power of (24.3 — 12.8) ÷ 24.3 = 0.473 or 47.3 per cent.

The following table will show the decrease in the percentage of power saved with respect to the increase of grade:

DRAWBAR PULL (LB. PER TON)

Grade	Level	2%	4%	6%	10%
Plain bearings	24.3	64.3	104.3	144.3	224.3
Roller bearings	12.8	52.8	92.8	132.8	212.8
Percentage of power saved	47.3	17.8	11.0	8.0	5.1

In the Carbondale test referred to by Mr. Harris where the average drawbar pull for plain-bearing car-wheels was 32 lb. per ton, against 13 lb. per ton for roller-bearing wheels, it is my belief that the poorest type of plain-bearing equipment was used at the time of making that test. The dynamometer reading is referred to as revealing the interesting fact that it took "twice as much power to start the plain-bearing cars as was required for those mounted on roller-bearings."

No mention is made, however, of the equally interesting fact that the trip mounted on roller bearings was started slowly and gradually, while the trip mounted on plain bearings was started off at two miles per hour, that speed being picked up right at the beginning. The record showed that the roller-bearing cars only attained a speed of two miles per hour after the train had gone a distance of 0.02 miles (105.6 ft.). This difference in starting should explain clearly why it took "twice the power" to start the trip of cars with the plain bearings as was required for the trip with roller bearings.

W. H. NOONE.

Thomas, W. Va.

Safety in Planning Circulation System

THERE is little doubt but that the plan of circulating the air in the mine illustrated in the letter of W. H. Luxton, *Coal Age*, July 15, p. 133, would be a great improvement over the circulation he describes as being that employed at present.

In the original plan, the fan was operated as a blower and the entire mine was ventilated by two splits of air, one passing to the east and the other to the west from the foot of the fan shaft and returning by the main haulage road to the hoisting shaft, which was the upcast. There were no overcasts and the system required a door at the mouth of each pair of cross-entries, as well as one on each crossover, making 15 doors in all.

The plan urged by Mr. Luxton suggests the building of two air bridges or overcasts, thereby providing four separate air splits instead of the two in the original plan, and reducing the number of doors to eleven. Of course, regulators will be required in the two short splits circulating on the north side of the mine, which will have some effect on the reading of the water gage in the fan drift. The regulators should be placed on the return and as close as possible to the overcasts so that they will not obstruct the haulage on the roads. The opening in each regulator should be arranged to give the proper proportion of air in that split.

ACCIDENTS RESULT FROM IMPROPER VENTILATION

One can hardly read Mr. Luxton's letter carefully without realizing that many avoidable accidents can occur as the result of an improper system of ventilation. In the instance cited, the mine is said to be very gaseous; and one great improvement is the change suggested of employing the exhaust system of ventilation whereby the main haulage road is made the intake, thus reducing the danger of the ignition of gas in the return current.

However, allow me to suggest the need of using double doors on each side of the hoisting shaft, instead of the single doors shown for deflecting the air into the two south entries on either side of the shaft. Perhaps the mining laws of Indiana do not require the use of double doors at these important points; but the practice of allowing an air split to be controlled by a single door should not be tolerated in a mine generating gas. A better plan, however, and one that would avoid double doors on the main haulage road would be to build two more overcasts for these south entries, thereby providing six splits of air in this mine, instead of four as suggested.

PLAN THE MINE WITH RESPECT TO VENTILATION

When planning a mine a careful study should be made of its future requirements in respect to ventilation, with a view to building overcasts only at points where they will be of permanent use. Another suggestion I would offer is the driving of three entries abreast in the development of a gaseous seam. It has the advantage of allowing the intake current to pass directly to the live workings at the inby end of each pair of headings, returning through the gob section that has been worked out in the advancing system of mining.

It is to be regretted that, so frequently, the plan of developing a mine is drawn up in the office with more regard to the extraction of the coal than the proper ventilation of the working places. It is true that the mining laws of Pennsylvania give the mine foreman full charge of all matters pertaining to ventilation, and for this reason, the foreman should be consulted in drawing up the plan of working. Instead, however, he is generally given the plan with orders to see that it is carried out in every detail. At the same time the foreman is held responsible for the proper ventilation of the mine.

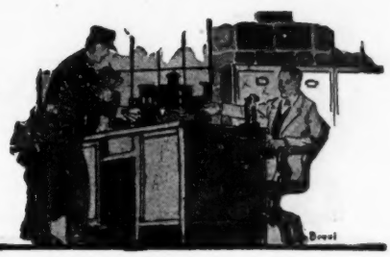
Before closing, allow me to draw attention to a point that has not been mentioned; that is the erection of so-called "emergency doors." That is a door that is hung and set open ready for use in case the original door is destroyed by accident. Such emergency doors should be erected at all important points in the circulation of a mine, as a means of safety, to prevent the temporary disarrangement of the circulation in any section, which is liable to result from accident and would endanger the men working at the face where the mine is generating gas. Whenever doors are required in a gaseous mine they should be in charge of a reliable person to avoid any interference with the circulating system.

Plains, Pa. RICHARD BOWEN.

Inquiries of General Interest

Answered by

James T. Beard



Estimating Requirements and Equipment When Opening a Mine

BEING about to develop a coal property of 1,500 acres in extent, we are anxious to obtain what information we can on the following points:

Assuming the specific gravity of the coal is 1.3, the seam being five feet thick, what tonnage can be taken from this property, allowing ten per cent for loss in mining?

This seam lies at a depth of 400 ft. below the surface; the coal is overlaid with five feet of black slate and above the slate are sandrock and shale. Below the coal is one foot of fireclay on four feet of limestone. The seam is known to give off gas.

We desire to open a mine that will permit the hoisting of 1,500 tons of coal in 8 hours; and want to ask, What should be the size of the shafts; and what pillars should be left in the mine for their protection? At what distance apart should these shafts be sunk? Starting from the bottom of the hoisting shaft, should the main headings be driven two abreast or three abreast; or how many parallel entries should be driven to insure the safe and economical operation of the mine? If more than two headings are needed, please explain why.

We expect to use mine cars weighing 1,500 lb. each and holding two tons of coal, employing mechanical haulage. What size of hoisting rope will be necessary, and what would be the proper size of engines to make this hoist? We will employ 500 men. What volume of air will be required to comply with the law and what size of blower or exhaust fan would give the best results? JOHN SMITH.

Republic, Pa.

Answering these questions in the order asked, we estimate the available tonnage of coal in this property as

$$\frac{0.9 \times 1{,}500\ (43{,}560 \times 5 \times 62.5 \times 1.3)}{2{,}000} = 11{,}944{,}968\ tons$$

The size of the hoisting shaft will depend on the length and width of the mine cars. Estimating on a capacity of two tons, at 40 cu.ft. per ton, gives for the cubic contents of a car 80 cu.ft., making the inside dimensions of a car, say 8 ft. long; average width, 4 ft.; depth of coal, 30 in. The dimensions, out to out, including bumpers, would be, say 9 ft. long and 5 ft. 2 in. width on top.

Then, allowing for a clearance of six inches between the bumpers and the sides of the shaft makes the required width of the shaft 10 ft. in the clear. Again, allowing for three inches clearance on each side of the car, four 4-in. guides and 4-in. buntons at the center, gives for the length of a double-compartment hoisting shaft, with a 3-ft. manway, 16 ft. in the clear.

The size of shaft pillars will depend chiefly on the character of the strata and method of working adopted. A safe rule for worst conditions is to make the diameter of a circular pillar, or the side of a square pillar, equal to the depth of cover. Another rule makes these dimensions six times the square root of the product of the depth of cover and thickness of the seam, all in feet and assuming a fairly level seam. This latter rule gives for the diameter or side of the shaft pillar, in this case, $6\sqrt{400 \times 5} = 268+$ ft., as compared with 400 ft. required by the first rule.

The distance, measured on a straight line, between the hoisting shaft and the air shaft or escape shaft should not be less than 300 ft.

Inasmuch as this seam is known to generate gas, the main headings starting from the foot of the hoisting shaft should be driven at least three abreast, so as to provide a separate main return airway on each side of the mine, the middle entry being the main intake and haulage road for the entire mine. But, owing to the extent of this property, it will generally prove more economical in the end to drive these main headings four abreast, which will provide separate haulage roads and return air-courses for each side of the mine and avoid delays in hauling.

To ascertain the size of rope required in hoisting from a depth of 400 ft., assume weight of car and coal to be $2 \times 2{,}000 + 1{,}500 = 5{,}500$ lb., and weight of cage, say 2,500 lb., making in all $5{,}500 + 2{,}500 = 8{,}000$ lb. or 4 tons. Then, since a 1-in. rope weighs 1.58 lb. per ft., its ultimate strength being 39 tons, and adding $\frac{1}{10}$ for the friction of the hoist, using a factor of safety of 5, we have for the diameter of the rope,

$$d = \sqrt{\frac{5 \times 4}{0.9\ (39) - \frac{1.58}{2{,}000}\ (5 \times 400)}} = say\ \tfrac{3}{4}\ in.$$

To allow for wear and corrosion, we would use a 1-in. cast-steel, 6-strand, 19-wire hoisting rope, weighing $400 \times 1.58 = 632$ lb.

To find the size of engine required, assume the weight of the car and cage is balanced leaving the unbalanced load, coal, 4,000 lb.; rope, say 600 lb.; friction, 400 lb.; total, 5,000 lb., which is the load on the engine.

Hoisting 1,500 tons in 2-ton cars, requires making 750 hoists. Allowing, say 30 min. for delays leaves $8 \times 60 - 30 = 450$ min. for 750 hoists; or $(450 \times 60) \div 750 = 36$ sec. per hoist. Again, allow, say 16 sec. for dumping in self-dumping cages and accelerating and retarding trips, gives 20 sec. for 400 ft., showing an average speed of $400 \div 20 = 20$ ft. per sec., or 1,200 ft. per min. The effective power is then $(5{,}000 \times 1{,}200) \div 33{,}000 = 181.8$ hp.

Assuming 80 per cent efficiency of engine; piston speed, 600 ft. per min.; mean effective cylinder pressure 65 lb. per sq.in., gives for the diameter of the cylinder

$$d = 205\sqrt{\frac{181.8}{0.80 \times 65 \times 600}} = 15.65,\ say\ 16\ in.$$

Using a second-motion engine, geared 4:1; circumference of winding 24 ft.; if the piston speed is 600 and the rope speed 1,200 ft. per min., the length of stroke is

$$l = \frac{24}{2 \times 4} \times \frac{600}{1{,}200} = 1.5\ ft.,\ or\ 18\ in.$$

Examination Questions

Answered by

James T. Beard

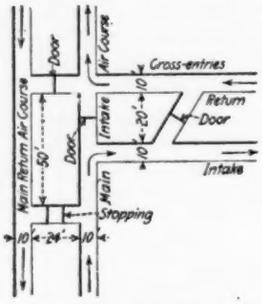
Foremen's and Asst. Foremen's Examinations Centralia, Pa., May 6, 7, 1920

(Selected Questions)

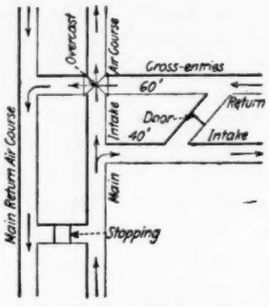
Ques.—In a mine ventilated by one current, what would be the effect of splitting the current into two or more different splits? Explain how it can be done and why such a result is obtained.

Ans.—The effect of splitting the air current into two or more separate currents is to produce a larger circulation of air by the same power. The pressure producing the circulation is reduced, also the velocity of the air at the working face, in the several splits, is reduced. Better air is supplied to the working face, since the return from each section of the mine passes at once into the main return airway leading out of the mine. An explosion occurring in one section is not liable to be transmitted to another section of the mine.

On the right of the accompanying figure is shown the manner of circulating air in a continuous current,



COURSING THE AIR IN A SINGLE CURRENT



DIVIDING THE AIR INTO TWO SPLITS

which is deflected by the door on the main intake aircourse, and made to circulate through the cross-entries, after which it escapes by the main return air-course to the upcast shaft or mouth of the mine. On the right of the same figure is shown how this current of air is divided into two spilts, one of which circulates through the cross-entries and returns over the overcast or airbridge to the main return air-course. The other split passes up the main intake to the face and returns through a crosscut to the main return leading out of the mine.

Ques.—How should a person who has received an electric shock be treated?

Ans.—Assuming the person has been released from contact with the wire but is unconscious, he should be removed to fresh air if this can be done quickly. Otherwise, artificial respiration must be employed promptly, using the prone or Schaefer method in which the person is laid on the ground, face downward but turned slightly to one side to allow freedom of breathing. The operator then kneeling a-straddle of the man's thighs brings his whole pressure to bear on the lower ribs and abdomen, for a brief period only, and again releases the pressure. This is repeated alternately at the rate of sixteen times a minute, corresponding to the normal rate of breathing. This action must be kept up for an indefinite period, perhaps one or two hours, until the man shows signs of life or is pronounced dead by a physician. While applying this method of respiration, further effort at resuscitation must be made by chafing the limbs of the victim, keeping him warm and protected from cold or draft. The application of smelling salts to the nostils may also be of assistance.

Ques.—As a first-aid worker, how would you treat an injured person having a fractured leg and a crushed foot?

Ans.—Send at once for a physician, and, in the meantime, carefully handle the injured limb and foot in an attempt to place it in a more comfortable position. In doing this, care must be taken to avoid the possibility of the broken bone piercing and lacerating the flesh. If the break is a simple fracture it may be possible to apply splints and bandages in a manner to permit the injured person to be laid on a stretcher and removed to where he will be more comfortable and have better air. Give no stimulant while waiting for the arrival of the physician, but do all possible to supply him with fresh air, and prevent undue bleeding or loss of consciousness.

Ques.—If, in making your morning examination, you discover ten inches of gas at the face and trailing back along the roof twenty feet to a point, what would be your duty in such a case?

Ans.—It is hard to understand how a careful fireboss would proceed a distance of twenty feet, under an accumulation of gas at the face of a room or heading. In such a case, it would be difficult to retire safely after reaching the face, since the man's movement in passing has disturbed the gas and created a dangerous atmosphere by its diffusion. It is not to be assumed that this accumulation represents a body of pure gas; it is, rather, a firedamp mixture. Having ascertained approximately the quantity of gas in the place the duty of the fireboss would be to retire quietly and with caution, in order to avoid unduly disturbing the gas. He should then place proper danger signals barring every entrance to the place. It may be advisable to bar the entrance of anyone into that section.

Having finished his examination of the mine or section of the mine in his charge, the fireboss should enter his report in the book kept for that purpose and state the condition he has found verbally to the mine foreman, first taking the precaution to remove the checks of men working in that portion of the mine where the gas was found. By consultation with the foreman, it should be decided whether it is safe to permit the men to enter the mine or the affected section of the mine, before the gas has been removed and all the places examined on that split of air and reported as safe for work. The removal of this body of gas is a serious proposition and should be attempted only by experienced men in charge of the fireboss.

The Railroad Situation—Causes and Remedies*

For a Freight-Traffic Increase of 45 Per Cent Equipment and Facilities Have Been Enlarged Only 5 Per Cent—Coal Crisis Laid to Strikes and Failure to Buy Normal Amounts in 1919—Intensive Loading, Increased Mileage and Prompt Unloading Urged

By Samuel O. Dunn
Editor of *Railway Age*

FOR a long time there have been complaints that the railways have been failing to handle satisfactorily the traffic which the industries of the country have been offering to them, and indeed failing to handle some of it at all. Complaints regarding their failure to handle all the coal traffic offered have been especially loud and insistent. For some years coal-mine operators and others interested in the coal industry have been attacking the managements of the railways upon the ground that their failure to handle the coal offered to them has been due to inefficient operation. The National Coal Association, the principal organization of the bituminous operators, constantly assailed the managements of the railroads in 1917 because of the inadequate car supply furnished to the mines, and by the propaganda carried on by them in that year the coal operators did more to force Government operation of the railroads on the country than any other class of business men. After Government control was adopted they continued to attack the operation of the railroads under the Railroad Administration upon similar grounds. Since the railways were returned to private operation on March 1 they have renewed their attacks upon the private managements.

Freight Service Unsatisfactory Since 1915

Now it is a matter of common knowledge that there has not been a time since late in the year 1915, except during a few months in the early part of 1919, when the railways have satisfactorily moved all the freight traffic the industries of the country have offered them. This has not been true merely as to coal. It has been true as to lumber, grain, iron and steel, and most other kinds of commodities. To what has been due the failure of the railways to render adequate and satisfactory service? The main reason can be given in a sentence. Since 1915 they have actually increased the total amount of freight traffic handled by them 45 per cent, but meantime there has been an increase in their equipment and other facilities of less than 5 per cent.

Furthermore, for some years prior to 1915 there had been a steady and rapid decline in the amount of new facilities provided by the railroads in proportion to the growth of traffic. When it can be shown that the concerns in an industry have increased by 45 per cent the amount of service rendered by them during a time when there has been an increase in their facilities of less than 5 per cent I do not believe it is fair to conclude that their failure to handle satisfactorily all the business offered is due mainly to inefficiency of operation. I think it would be more just to concede that they had been efficiently operated, and that their inability to handle satisfactorily all the business offered had been due mainly to the fact that their business had increased out of all proportion to the increase in their facilities.

Why have railroad facilities not been increased more? In the seven years ending with 1917, which was the last year of private operation, the railroads repeatedly asked for advances in their rates on the ground that their expenses were increasing faster than their earnings. Although prices and wages in all industries were increasing these applications of the railways for advances in rates were almost uniformly denied, with the result that in the last two years of private operation, 1916 and 1917, the average freight rate in this country was lower than ever before. Meantime from 1910 to 1915 there was a steady decline in the percentage of return earned by the railroads. The inevitable consequence was a decline in the investment made in them. The investment made in railroads went down from $800,000,000 in 1910 to less than $300,000,000 in 1915 and 1916. That is why the facilities of the railroads were inadequate when this country entered the war. Under Government control the increases made in equipment and other facilities were only about one-half as much in proportion as they had been under private operation.

Meantime a vast expansion was going on in many other industries due to the fact that in other industries large profits were being made. The coal industry affords a good example. The largest production of bituminous coal ever obtained was in 1918, when it amounted to 579,386,000 tons. Within recent years, however, the capacity of the mines operated has been so greatly increased that they are given a total rating by the Geological Survey of from 900,000,000 to 950,000,000 tons a year, or over 50 per cent more than ever was produced.

Tremendous Growth by Automobile Industry

The expansion of some other industries has been far greater in proportion. In 1914 the automobile industry produced 573,000 cars. It is estimated that this year it will produce 2,250,000 cars, an increase in output of almost 350 per cent, and the capacity of the automobile manufacturing plants is estimated to be five times as great as the number of cars produced six years ago. In view of the very small increase in the facilities of the railways and the vast expansion of the productive capacity of many other industries, is there any reason why we should be surprised that the railways are unable to handle all the business that is offered to them? When such general facts as these, showing that the productive capacity of the industries of the country has increased much more than the transportation capacity of the railways, are presented some persons concede that the facilities of the railways, through no fault of the railway managements, have become inadequate and

*Address delivered before the Illinois and Wisconsin Retail Coal Dealers' Association at Milwaukee, Wis., Aug. 5, 1920.

that they must be greatly enlarged, but charge that the railways have not within recent months been making reasonably efficient use of what facilities they have, attributing to their alleged inefficiency the major part of the existing shortage of coal and failure to secure transportation for a large part of the commodities which are being produced. In fact there seems to be a general impression that the railways within recent months, and especially since they were returned to private operation on March 1, have been seriously "falling down" and that the amount of traffic handled has been substantially less than in past years.

What are the facts about this? You may be surprised to be told that statistics of the Interstate Commerce Commission show that in March, the first month after the railways were returned to private operation, they moved 30 per cent more freight than in March, 1919, and more than ever was transported in any March in history. At the end of March there began a series of "outlaw" railroad strikes which for some months seriously interfered with the normal operation of the railways. There is no more justification for criticising the managements of the railways because these strikes came and resulted in a reduction of transportation than there is for criticising the steel companies or the coal operators because they had strikes last year which resulted in a reduction of the production of steel and coal. As a matter of fact the private managements of the railroads were not responsible for these "outlaw" strikes at all, because they were a result of the delay and final failure of the Government's Railroad Administration to settle controversies which arose between it and the railway employees long before the railways were returned to private operation. Nevertheless, in spite of the strikes the railways in the first five months of 1920 handled 20 per cent more freight than in the same months of 1919, and about the same as the same months of 1918.

Railroad Inefficiency Not Solely to Blame

But it may be said at least that the railways recently have been very inefficient in the handling of coal, and that as a result the country is today confronted with a serious coal shortage. I may surprise you by saying that I challenge as unfounded the statements which have emanated from many sources to the effect that failure of the railways to move coal is mainly responsible for the present and prospective coal shortage. I am going to present to you some facts which I believe demonstrate that the coal shortage is mainly attributable to other things than the railroad situation.

The causes of the present coal crisis date back to the early part of the year 1919. During the first four months of that year there was a large surplus of coal cars. The railways carried on vigorous agitation to secure a larger production and transportation of coal, but consumers and dealers would not buy it in normal amounts. Consequently the operators would not or could not produce it, and the country's available supplies were not increased as they should have been. After the middle of the year 1919 the demand for and production of coal increased, and the railways handled the business so well that there was no coal shortage in 1919. In the four weeks ending on Oct. 25, 1919, the average amount of coal produced and transported weekly had risen, according to the reports of the U. S. Geological Survey, to 12,089,000 tons.

In November, 1919, however, there came the strike of miners, which shut down most of the bituminous mines. Owing to the small production in the spring of 1919 the country's stored supplies were below normal. The railroads were in no measure responsible for this. And what was the effect of the coal strike? This is a point of the utmost importance in relation to the present situation. The facts are clearly set forth in the reports of the Geological Survey. The normal production of coal at the time the coal strike came, as estimated by the Geological Survey on the basis of the amount actually produced and transported during the four weeks just before it began, was 12,089,000 tons a week. The effects produced by the coal strike, as shown by the Geological Survey's figures, were as follows:

	Normal Production, Tons	Percentage of Actual to Normal Production	Actual Production, Tons
Week ending Nov. 8	12,089,000	29.6	3,582,000
Week ending Nov. 15	12,089,000	33.3	4,024,000
Week ending Nov. 22	12,089,000	44.3	5,344,000
Week ending Nov. 29	12,089,000	47.4	5,334,000
Week ending Dec. 6	12,089,000	43.5	5,245,000
Week ending Dec. 13	12,089,000	48.0	5,800,000
Week ending Dec. 20	12,089,000	86.9	10,501,000
Totals	84,623,000	47.8	39,830,000

It follows that the direct result of the coal strike was that at the beginning of the year 1920 there were immediately available in the country almost 45,000,000 tons less coal than there would have been if it had not occurred. In the entire year 1919 the reduction in the production of coal as compared with 1918, due almost entirely to causes for which the railways were not responsible, was 121,000,000 tons. In consequence the country entered the year 1920 with a serious coal shortage.

How Coal Cars Became Scattered

There was another important condition the coal-mine strike created. Bituminous production during the strike was continued in only a comparatively few mines, located chiefly in West Virginia. It was necessary to concentrate on transportation from these mines and to send cars all over the country regardless of their ownership. The coal cars of the railways were thus scattered everywhere, which, on the resumption of the general operation of the mines, was certain to make it impossible for months for the railways to move coal in a normal manner. With a coal shortage and the demoralized transportation conditions due to the coal strike confronting them at the beginning of this year the railways began a strenuous effort, which has been continued up to the present time, to replenish the country's coal supply. In spite of all the difficulties under which they were working the railways between Jan. 1 and April 10 moved 140,600,000 tons of bituminous coal. This was 29,400,000 more tons than had been produced and transported in the corresponding period of 1919; it was 900,000 tons more than in 1918 and only 1,850,000 tons less than the highest record ever made up to that date, which was in 1917. Up to this time it looked as if the railways were going to be able to haul enough coal entirely to offset the shortage which existed on Jan. 1 owing to causes for which they were in no degree responsible.

At this time, however, the railways began to have labor troubles of their own. The "outlaw" railway strikes began in April. In consequence in the week ending April 17 there was a sharp increase in the shortage of cars at the mines and a sharp decrease of coal production. The railway strikes have continued sporadically and intermittently almost ever since. In spite of

them, however, the railways up to July 24 had moved 283,000,000 tons of bituminous coal. This was 45,000,000 tons more than was produced and transported in the corresponding period of the year 1919. It was only about 31,000,000 tons less than had been transported in 1918 during the same period, and the record of 1918 up to July 17 was the highest record ever established.

The foregoing facts demonstrate that the present coal situation is not mainly due to the failure of the railways to move the coal. It is due to the reduction of production in 1919, and especially to the loss of 45,000,000 tons of production in November and December because of the coal strike. If the coal which was lost to production by the strike in the mines in November and December were now available the country would not have any coal shortage or be confronted with the prospect of one.

Since the railways have moved an enormously greater tonnage of coal than they did in the same period of last year, and since, nevertheless, certain sections of the country, especially the Northwest, are confronted with real danger of a fuel famine, the question naturally arises as to whether there has not been something in the distribution of the coal actually transported which has contributed to the present situation. Why, especially, is there an acute shortage of coal in the Northwest? The following statistics partly answer the question:

	First Five Months of 1919, Tons	First Five Months of 1920, Tons	Decrease, Tons
Coal shipped to head of Lakes	5,000,000	1,650,000	3,350,000
			Increase
Coal exported, including Canada	1,706,000	5,796,000	4,090,000

It will be seen that in the first five months of this year, when the total coal transported was almost 37,000,000 tons more than last year, there was a decline of 3,350,000 tons in the coal moved to the head of the Lakes, compared with last year, while there was an increase of 4,090,000 tons in the number of tons exported.

Freight Movement Easily Disrupted

Do I mean to give the impression that the railways have handled and are able to handle all the coal that the welfare of the country demands? By no means. While the present acute coal situation is not chiefly due to inadequacy of railway facilities, it is partly due to it. The railways with existing facilities can transport substantially 12,000,000 tons a week, or about 625,000,000 tons a year, provided the transportation of coal can be kept uniformily at its practicable maximum throughout the year. But the country needs this much or more coal. In consequence anything, such as a strike in the mines or the recent "outlaw" railroad strikes, that interferes with the railways moving in every week of the year practically the maximum amount of coal experience shows they are capable of moving causes the country to fail to get as much coal as it needs.

The total capacity of the bituminous mines, as rated by the Geological Survey, is about 18,000,000 tons a week. I do not know whether a market, both domestic and export, for this amount of coal could be found at prices which would justify the operators in producing it. Of one thing, however, I am sure, and that is that the railways with their existing facilities, even when working to capacity, cannot transport more than about two-thirds this much coal and handle equally well the country's other traffic. If they should move more than this much coal it would be done by devoting a disproportionately large part of the railways' tracks, locomotives, cars and terminals to the transportation of coal. It follows that unless the railways are to discriminate unfairly in favor of shippers of coal they cannot handle anywhere near all the coal the mines can now produce without a very great enlargement of their facilities.

What are the prospects of an enlargement of facilities? I believe they are better now than for many years. They have been made better by the recent decision of the Interstate Commerce Commission in the rate-advance case. Before the recent wage award of the Railroad Labor Board the total earnings and expenses of the railways were running at a rate which would have produced for them not more than $200,000,000 net operating income annually. The wage award provided for advances in wages amounting to over $600,000,000 annually. This addition to operating expenses without any advance in rates would have made total operating expenses and taxes at least $400,000,000 more than total earnings. The advance in rates will, according to the latest estimate, increase the earnings of the railways about $1,550,000,000 a year. This will enable them to earn a net operating income of, roughly, $1,150,000,000, or about 5⅞ per cent upon their book cost of road and equipment and about 6 per cent upon the valuation of $18,900,000,000 which the Interstate Commerce Commission has placed upon the properties.

Improved Outlook for Railway Securities

The net return they will be able to earn seems small compared with that of most large industries. But it will be larger than the railways have earned in past years except in 1910 and 1916. Furthermore, there apparently will be greater certainty in future regarding the net return of the railways than regarding those of most other business concerns. It therefore seems reasonable to believe that railway securities will again become what they formerly were—a preferred form of investment.

The point cannot be too much emphasized, however, that the present shortage of railroad facilities of all kinds is very great and that it will require the investment of a vast amount of new capital and years of planning and work to bring the transportation capacity of the railways again abreast of the productive capacity of our industries. At the present time concerns which are among the strongest financially can hardly raise large amounts of new capital even by the selling of bonds on a basis to yield less than 7 per cent. Since the railways are to be allowed to earn a return of only 6 per cent it is evident that until financial conditions improve they will meet with great difficulties in raising large amounts of capital. The problem presented to them, it should be understood, is not merely that of acquiring more locomotives and cars. We always speak of the inability of shippers to get enough transportation as due to "car shortage," but for every increase in the number of cars there must be, if the cars are to be efficiently moved, a proportionate increase in locomotives, main tracks, yard tracks and terminal tracks. On the basis of present wages and prices the total new investment which should be made in the railways during the next three years to make up for the existing deficiency of facilities and provide for handling the normal increase of business is at least $6,000,000,000, or $2,000,000,000 a year.

Now it will obviously be very difficult to raise such a vast amount of capital and provide such vast additional

facilities. While these things were being done if there should be an increase in the efficiency with which existing facilities are used there would be a chronic shortage of transportation and a chronic limitation of production in all lines. So we have confronting us not only the problem of securing vast increases in railway facilities but the immediate and pressing problem of increasing the efficiency with which the facilities now available are used in order to enable the country to get through as well as possible the time which must elapse before adequate increases in facilities can be made.

Responsibility of Shippers and Consignees

The essence of this problem is that of getting each car moved more miles per day and of getting each car loaded more heavily. The railway managements are now making extraordinary efforts to speed up the movement and increase the loading of cars. They have created what is known as the "Advisory Committee," of which Daniel Willard, president of the Baltimore & Ohio, is chairman, to supervise the operation of all the railways; and local committees in all the large industrial centers have been created to work under the direction of the advisory committee. In past years the average miles made per car per day has seldom exceeded twenty-five. The railways have set themselves as a standard to attain an average of thirty miles per car per day. Although the average capacity of a freight car is over forty tons, the average load has never equalled thirty tons. The railway managements have set an average of thirty tons as the standard hereafter to be attained in loading cars.

The chief responsibility and duty of securing more intensive and efficient use of cars and other facilities rest upon the managements of the railways. But cars are loaded and unloaded by shippers and consignees. For this purpose they are in the hands of shippers and consignees about one-third of the time. Therefore whether there will be a great increase in the loading of cars will be determined chiefly by the shippers themselves, and whether there will be a great increase in the average miles made per car per day will depend largely upon whether the shippers and consignees do or do not reduce the average time they hold them for reconsignment, loading, unloading, etc.

All-Round Efficiency Essential

It is obviously to the interest of the railways to secure the very greatest practicable efficiency from the use of their available cars and other facilities. It is even more to the interest of the shippers and consignees of the country to do so, because for months to come the amount of freight which the shippers and consignees will be able to get handled, and therefore the amount of business they will be able to do and the amount of profits they will be able to make, will depend very largely upon the efficiency with which the existing facilities of the railways are used.

Since the railways cannot secure the greatest movement of business with the available facilities unless the shippers and receivers of freight will give them the utmost co-operation by loading cars as heavily as possible and loading and unloading them as promptly as possible any shipper or consignee who fails to give this co-operation will have absolutely no right to criticise the management of any railway because it does not make the best possible use of its cars. Every increase of one mile per day in the average movement of freight cars will add 100,000 to the available supply of cars. Every increase of one ton in the average amount of freight loaded per car will increase the available supply of cars by 75,000. It is practicable for the railways and shippers, by the most energetic efforts and the closest co-operation, to so increase the amount of business handled with existing cars as to enable the railways, the business interests and the nation to pass safely through the transportation crisis with which we are now confronted.

I appeal to each of you, and to all other shippers, not in the interest of the railways, nor merely in the interest of the country as a whole, but in your own selfish interest, to help the railways and other business interests of the country in every way that you can in solving this problem of securing the most efficient possible use of the available railroad facilities in the period of stress that is immediately ahead of us. I have no doubt that if this period is safely passed a solution of the railroad problem will finally be achieved which will contribute considerably to the prosperity of every business concern in the country and to the welfare of every individual.

Reduction of U. S. Exports Offset by Increase In Manufactures Exported

SHORTAGE in our exportable surplus of food, to which British Ambassador Geddes has just called attention, is evidenced, says a statement by the National City Bank of New York, by the figures of our export record. Our surplus of food products for exportation has been gradually but steadily dwindling for several years. Foodstuffs formed 56 per cent of our exports in 1880, 42 per cent in 1890, 40 per cent in 1900, 27 per cent in 1910, and 18 per cent in 1914, the year immediately preceding the war. Our recorded exports of foodstuffs jumped from $430,000,000 in the fiscal year 1914 to $980,000,000 in 1916; $1,538,000,000 in 1918, and $2,505,000,000 in the fiscal year 1919.

This war-time increase, however, was temporary. In the month of April, 1920, the latest for which detailed figures of exports are available, foodstuffs form only 21 per cent of the exports, against 43 per cent in April 1919, and practically 40 per cent in the corresponding month of 1918.

Notable Gain in Manufactures Exported

This falling off in exportation of foodstuffs is offset by a corresponding increase in the share which manufactures form of the total of outgoing merchandise. Manufactures formed in April, 1920, 52 per cent of the total value of merchandise exported from this country, against 43 per cent in April, 1919; 47 per cent in the full year 1914; 45 per cent in 1910; 35 per cent in 1900; 21 per cent in 1890; and 15 per cent in 1880. The value of manufactures exported from the United States in the year which ends with this month will approximate $3,750,000,000 as against $1,100,000,000 in the year preceding the war.

Thus while our surplus of food which can be spared for the outside world is declining, manufactures are taking the place of the food in the export trade of the country, which will total about $8,000,000,000 in 1920 against $7,000,000,000 in 1919, and $6,290,000,000 in the highest war year, 1917, manufactures more than offsetting the fall off in value of foodstuffs exported.

Fuel Stocks Reported by Railroads

OF THE soft coal mined in the United States the railroads consume 28 per cent and normally hold about the same proportion of the total quantity of coal in storage. Data on railroad-fuel stocks from July 1, 1916, to Jan. 1, 1919, prepared by the Geological Survey, are given in the following table:

STOCKS OF BITUMINOUS COAL HELD BY RAILROADS FOR FUEL, EXCLUDING COAL IN TRANSIT (a)

(Net Tons)

Date	Eastern District	Western District	Southern District	Totals
July 1, 1916	6,115,000	2,246,000	824,000	9,185,000
January 1, 1917	3,981,749	2,234,345	427,388	6,643,482
July 1, 1917	3,622,000	3,068,000	486,000	7,176,000
January 1, 1918	4,051,193	3,960,269	878,789	8,890,251
July 1, 1918	3,797,000	4,849,000	1,310,000	9,956,000
January 1, 1919	4,736,693	7,111,268	1,796,741	13,643,702

(a) Complete data on railroad fuel stocks are available for Jan. 1 of the years 1917, 1918 and 1919. For the other dates the figures given are estimates of the total based on actual reports from roads normally carrying over 90 per cent of the stocks.

It will be seen that stocks of railroad fuel ranged during the two and a half years covered by the table from a minimum of 6,643,000 tons to a maximum of 13,644,000 tons at the beginning of 1919.

In comparison with these figures the stocks held by the railroads in the first half of 1920 were small. Data furnished by the American Railroad Association indicate that 124 of the principal carriers had on hand on Feb. 29, 1920, in cars and in stockpiles 4,275,348 net tons of coal, and that on May 31 their holdings had decreased to 3,411,348 tons.

Questionnaire Brought Diverse Returns

The questionnaire used in obtaining these statistics asked specifically for "Tons in cars" and "Tons in stockpiles." Many roads furnished also the tons in chutes, and it is probable that others included the quantity in chutes under the caption "Tons in cars." As not all of the quantity in chutes was obtained, however, the figures are somewhat short of the total amount of fuel coal held by the railroads. Allowing for the small roads not reporting, the results of the inquiry may be summarized as follows:

STOCKS OF BITUMINOUS COAL HELD BY RAILROADS FOR FUEL, IN CARS AND IN STOCK PILES, FEB. 29, AND JUNE 1, 1920

(In Net Tons)

Date	Eastern District	Western District	Southern District	Totals
February 29, 1920	2,290,000	1,880,000	614,000	4,484,000
June 1, 1920	1,461,000	1,840,000	443,000	3,744,000

These figures, although not strictly comparable with the data for previous years, indicate clearly that railroad-fuel stocks on Feb. 29, 1920, were far below those of the years immediately preceding. Yet from Feb. 29 to June 1, 1920, largely as a result of the switchmen's strike, the stocks continued to decline.

Like other Eastern carriers, the New England roads reported stocks far below their customary holdings in the last four years. On Feb. 29, 1920, they had on hand in cars and in stockpiles 365,000 tons, sufficient on the average for about three weeks and two days' operation. Between Feb. 29 and June 1 their stocks declined 30 per cent, reaching on the latter date 254,000 tons, or about two weeks and three days' supply.

Depleted stocks of railroad fuel are particularly significant to the general consumer because they point to the probability that the railroads will have to confiscate coal or assign cars freely, measures which necessarily interfere with the regular deliveries of coal to other users.

E. H. Coxe Considers Lewis Overgenerous In Shifting All Blame to Farrington

EVERY person interested in the production of coal should read and carefully ponder the statement of President Lewis of the United Mine Workers of America, which appeared in the press on July 31, commenting on President Wilson's telegram to him requesting that the striking miners in Illinois and Indiana be ordered back to work.

For the benefit of those who have not seen the statement it is quoted below:

I am profoundly impressed by the President's telegram. The fairness of his statement must be apparent to everyone with respect for constituted authority or the least regard for the public welfare. The suggestions of the President will be approved by every right-thinking and loyal member of the United Mine Workers of America, and will be considered as a stinging rebuke to men of the type of Frank Farrington, who has deliberately and maliciously incited men to disregard their contract obligations to the detriment of themselves and the inconvenience of the nation. Public castigation of such leaders cannot be too severe.

Up to this time the Illinois coal operators have not requested this office to enforce the validity of the wage agreement in that state. I intend, however, in compliance with the wishes of the President, to immediately issue a mandatory order instructing and directing all miners now on strike in Illinois and Indiana to immediately return to work so as to permit the normal operation of the mines. Compliance with this order by the mine workers will pave the way for the calling of a wage convention as suggested by the President for consideration of inequalities in the agreement.

This seems to me to be about the weakest, most ridiculous statement ever issued by a labor leader. Why was it necessary for the President of the United States, the Illinois Coal Operators or any one else to call on him or his office to act? Was it not his plain duty, if he had the power (which he seems to have had), to see that the agreement entered into by his organization was lived up to by that organization, without waiting to be called on by the President of the United States to act?

It would also seem that he was very generous with President Wilson's "rebuke," which was apparently aimed about one-third at him and two-thirds at Frank Farrington, president of the Illinois miners, passing it all on to Farrington and keeping none for himself. If he really regarded Farrington's action as malicious, as he would now have the public and the miners believe, why didn't he make some effort sooner to interfere instead of waiting until conditions got so bad the President of the United States had to intervene?

Surely there seems to have been little use in making an agreement with such an organization headed by such men, for it is now plainly apparent that it was not entered into in good faith with any idea of living up to it, for the ink on the signature was hardly dry before the Illinois miners, headed by Farrington, set about violating it, and Lewis by his self-confessed silence encouraged the violations.

EDWARD H. COXE,
General Manager Snowden Coke Co.

Brownsville, Pa., Aug. 3, 1920.

Terms of Spa Coal Agreement with Germany Published and Epitomized

Credit Provision for Purchase of Foodstuffs and Raw Materials as Well as Penalty Clause Likely to Insure Prompt and Abundant Deliveries

The following is the British official version of the conditions laid down in the Allied Note on the subject of coal deliveries by Germany in carrying out the terms of the Versailles peace treaty:

"(1) The German Government undertakes to place at the disposal of the Allies, from Aug. 1, 1920, for the ensuing six months, 2,000,000 tons of coal per month, this figure having been approved by the Reparation Commission.

"(2) The Allied Governments will credit the reparation accounts with the value of this coal, as far as it is delivered by rail or inland navigation, and it will be valued at the German internal price in accordance with Paragraph 6 (A), Annex V, Part VIII, of the Treaty of Versailles. In addition, in consideration of the admission of the right of the Allies to have coal of specified kind and quality delivered to them, a premium of 5 gold marks, payable in cash by the party taking delivery, shall be applied to the acquisition of foodstuffs for the German miners.

"(3) During the period of the coal deliveries provided for above, the stipulations of Paragraphs 2, 3 and 4 of the draft Control Protocol of July 11, 1920, shall be put in force at once in the modified form of the Annex hereto.

"(4) An agreement shall be made forthwith between the Allies for distribution of the Upper Silesian coal output by a commission, on which Germany will be represented. This agreement shall be submitted for the approval of the Reparation Commission.

"(5) The commission, on which the Germans shall be represented, shall meet forthwith at Essen. Its purpose shall be to seek means by which the conditions of life among the miners with regard to food and clothing can be improved, with a view to the better working of the mines.

"(6) The Allied Governments declare their readiness to make advances to Germany equal in amount to the difference between the price paid under paragraph 2 above and the export price of German coal f.o.b. in German ports, or the English export price f.o.b. in English ports, whichever may be the lowest, as laid down in paragraph 6 (D) of Annex V, Part VIII, of the Treaty of Versailles. These advances shall be made in accordance with Articles 235 and 251 of the Treaty of Versailles. They shall enjoy an absolute priority over all other Allied claims on Germany. The advance shall be made at the end of each month, in accordance with the number of tons delivered and the average f.o.b. price of coal during the period. Advances on account shall be made by the Allies at the end of the first month, without waiting for the exact figures.

"(7) If by Nov. 15, 1920, it is ascertained that the total deliveries for August, September, and October, 1920, have not reached 6,000,000 tons, the Allies will proceed to the occupation of a further portion of German territory, either the region of the Ruhr or some other.

ANNEX

"(1) A permanent delegation of the Reparation Commission will be set up at Berlin, whose mission will be to satisfy itself by the following means that the deliveries of coal to the Allies provided for under the agreement of July 15, 1920, shall be carried out: The programs for the general distribution of output, with details of origin and kind on the one hand, and the orders given to ensure deliveries to the Allied Powers on the other hand, shall be drawn up by the responsible German authorities and submitted by them for the approval of the said delegation a reasonable time before their despatch to the executive bodies responsible for their execution.

"No modification in the said program which may involve a reduction in the amount of the deliveries to the Allies shall be put into effect without prior approval of the delegation of the Reparation Commission in Berlin.

"(3) The Reparation Commission, to which the German Government must periodically report the execution by the competent bodies of the orders for deliveries to the Allies, will notify to the interested Powers any infraction of the principles adopted herein."

Some doubts have been expressed as to the exact meaning of the conditions. They have been epitomized in the following manner:

The German home price per ton is 225 mk., or 75 fr., the British export price is 110s., or 200 fr., making a difference between the two prices of 125 fr. Thus for every ton delivered by Germany 75 fr. will be credited to her account with the Reparations Commission for the general benefit of the Allies, while the Allies will allow Germany a credit of 125 fr. for the purchase of foodstuffs and raw materials. Finally, France, or other purchasing country, will pay Germany 5 mk. gold in cash. This is a premium on coal of special quality, and is to be directly utilized for the improvement of the German miners' conditions. The credit based on the difference between the two prices would aggregate 2,500,000,000 fr. yearly on the proposed basis of 2,000,000 tons monthly, but the present arrangement is provisional, and is to be reconsidered at the close of a six months' period.

Under the scheme Belgium will receive from Germany 85 per cent of her coal requirements, Italy 68 per cent, and France and Germany each 72 per cent. In the end it was decided to leave the question of the Silesian coal in abeyance pending the plebiscite.

In the meantime, according to the *Colliery Guardian*, there appears to be considerable unrest among the miners in the Ruhr district. A meeting of the workers' section of the Chamber of Labor at Essen has decided, as a protest against the Entente ultimatum, to refuse to work extra shifts, and not to submit quietly to the confiscation of coal and the armed occupation. The trade union of Christian Miners protests against considerably longer hours being imposed on German pit workers than those elsewhere are prepared to work.

In an interview, July 20, Herr Simons said the German delegates would, nevertheless, not have signed the agreement if they had not been convinced that the coal demands of the Allies were capable of fulfillment.

The Cabinet has decided to reorganize the production and distribution of coal.

Freight Market Active; Rates Unchanged

W. W. Battie & Co.'s coal trade freight report announces that freight market conditions are practically the same as a week ago. Numerous steamers have been chartered to carry coal to European and South American ports at or about rates previously quoted. A fair demand for tonnage still continues.

Freight rates by steamer are as follows:

		Tons Discharged Daily
Malmo	$11.50/12.00 —	1,000
Copenhagen	11.50/12.00 —	1,000
Stockholm	12.00/12.50 —	800
Gothenburg	11.50/12.00 —	1,000
Antwerp/Rotterdam	9.50/10.00 —	1,000
Hamburg	About 12.00 —	1,000
Frenth Atlantic ex. Rouen	9.50/10.00 —	700
Algiers	About 13.50 —	800
West Italy	About 13.50 —	1,000
Marseilles	About 13.50 —	1,000
Piraeus	About 14.00 —	1,000
Trieste/Venice	About 14.50 —	1,000
Port Said	About 15.00 —	1,000
Constantinople	About 15.00 —	500
Gibraltar	11.00/11.50 —	1,000
Pernambuco	About 11.00 —	500
Bahia	About 11.00 —	500
Rio	10.00/10.50 —	1,000
Santos	10.50/11.00 —	600
Buenos Aires or Montevideo or La Plata	10.00/10.50 —	1,000
Para	About 11.00 —	500
Rosario	About 11.00 —	750
To Nitrate Range	About 9.00 —	750
Havana	About 6.00 —	500
Sagua or Cardenas	7.50/ 8.00 —	300
Cienfuegos	About 7.00 —	500
Caibarien	7.50/ 8.00 —	300
Guantanamo	7.00/ 7.50 —	500
Manzanillo	About 9.00 —	300
Bermuda	About 6.50 —	300
Bermuda p. c. and dis. free		
Kingston	About 8.00 —	400
Barbados	About 8.00 —	500
St. Lucia	About 8.00 —	500
Santiago	7.00/ 7.50 —	500
Port of Spain, Trin	About 8.00 —	500
Curacao	About 8.00 —	500
Free p. c. Curacao		
Demarera	13.00	400
St. Thomas	About 750 —	500

All above rates gross form charter.

News from the Capital

By Paul Wooton

May Quash Assigned-Car Order

ASSIGNED cars will be a thing of the past if the Supreme Court upholds the decision of the U. S. Circuit Court of Appeals at Asheville in the Lamberts Run case. This is the opinion of Rush Butler, counsel for the National Coal Association.

Commission Postpones $10 Demurrage

AFTER having notified the roads that changes in tariffs would be allowed placing a demurrage charge of $10 per day on coal cars held after the free time had elapsed the Interstate Commerce Commission on Aug. 18 refused the application of the railroads for this change in tariffs and ordered hearings on the subject, setting a new time limit of Dec. 17, 1920, as the earliest date at which the new charge can become effective.

Special permission number 50,321, issued by the commission on July 31 (*Coal Age*, Aug. 19, page 415), provided for a storage charge of $10 per day on coal cars and authorized and directed the railroads to file modification in their tariffs to make such a charge effective. The railroads, through their common agent at Washington (J. E. Fairbanks), made such application, but were notified on Aug. 19 that as regards this feature of the special permission the commission had suspended action until Dec. 17. The reason assigned is that as the rights and interests of the public appear to be seriously affected by this provision a public hearing is considered necessary before such charges be permitted to become effective.

Aitchison Upholds Roads' Right to Insist on Return of Cars Empty

IN a letter to H. B. Thurston, chairman of the Pittsburgh Terminal Committee, Commissioner Clyde B. Aitchison, of the Interstate Commerce Commission, says:

With reference to the distribution of available equipment and the point raised by you as to whether a railroad has the right to refuse to accept a carload from a shipper when the car has been received by the shipper under load and reloaded by him contrary to the requirements of the carrier:

It is generally understood that when a car received by a consignee who is also a shipper is unloaded by him, the contract with the railway company for the delivery of his goods is thereby fulfilled, and if in the interests of a fair distribution of cars the carrier desires that such a car be not reloaded by the shipper unloading the car it has a perfect right to request return of the car empty, and in the event of the shipper loading the car is justified in refusing to accept the load, requiring the shipper to release the equipment and turn it back empty.

If such a practice were not proper it would be impossible to make a fair distribution of empty cars, and shippers who are also large receivers of freight would at all times have more cars for outbound loading than they were entitled to, to the disadvantage of other shippers.

Bureau of Mines Will Classify and Analyze Coal at Sewalls Point Pool

A CO-OPERATIVE agreement between the Bureau of Mines and the Sewalls Point Coal Exchange, Inc., whereby the former will grade and classify coal shipped to the tidewater pools at Sewalls Point was signed by the Secretary of the Interior Aug. 20. The agreement had been signed previously by F. G. Cottrell, director of the Bureau of Mines; G. H. Caperton, president of the Sewalls Point Coal Exchange, and S. T. Snead, secretary of the same organization. The text of the agreement is as follows:

The U. S. Bureau of Mines (hereinafter referred to as the Bureau) and the Sewalls Point Coal Exchange, Inc., Norfolk, Va. (hereinafter referred to as the Exchange), desiring to conduct investigations concerning preparation of coal with a view to increasing efficiency in use and economic development of the industry by improving the grading and classification of coal shipped to Tidewater Pools, hereby mutually agree as follows:

(1) All work herein described shall be directed by the Bureau of Mines according to a program as mutually agreed upon between the Bureau and the Exchange, and all methods employed shall be the standard methods of the Bureau of Mines.

(2) In the district to be investigated the Bureau agrees to complete a list of mine samples and analyses.

(3) The Bureau agrees to obtain at the mine tipple, point of delivery, or other place as agreed upon, representative samples of the commercial coal as shipped by the several mines.

(4) The Bureau agrees to furnish the necessary portable field equipment for the samplers.

(5) The Bureau agrees to make, at its Pittsburgh laboratory, proximate analyses and B.t.u. determinations of all samples which are acceptable to the Bureau, and ultimate analyses and fusing temperature of ash determinations of such samples as may be mutually agreed upon. Reports of the laboratory determinations will be furnished the Exchange as soon as made, together with such information as appertains thereto.

(6) All analyses may be published by the Bureau of Mines, due credit being accorded the Exchange for its co-operation, but the Exchange shall have the privilege of prior publication in a form mutually agreed upon for the confidential information of members of the Exchange.

(7) The conduct of all the foregoing described work shall subject the Bureau of Mines to no expense other than for general direction. To this end the Exchange agrees to pay salaries, subsistence, and traveling expenses of field men engaged in taking mine samples while so engaged; to pay the salaries and expenses of samplers obtaining commercial samples, and to furnish all necessary labor and such heavy appliances as may be needed in the sampling, and to

pay the salaries of men engaged in laboratory work to the extent of the actual cost of such analyses made for the Exchange.

(8) The extent of this program as to number of men employed and amount of work undertaken shall be a matter of mutual agreement in writing between the Exchange and the Bureau.

(9) It is mutually understood that this agreement shall be effective after being signed by the parties thereto, upon its approval by the Secretary of the Interior, and that it shall continue in effect until the work herein contemplated shall have been completed, provided that at the end of six months the agreement can be terminated by either party upon not less than thirty days' notice to the other party.

Cleveland Conference Fails and Central Competitive Group Breaks Up Into State Scale Meetings

Arrangement to Make Local Agreements Unusual — Resumption of Relations Expected Before April 1, 1922 — In Telegram to President Wilson Operators and Mine Workers Give Reasons for Failure to Agree

AFTER more than twenty years of unified collective bargaining the Central Competitive Field has broken up and for the settlement of the present demands of the local unions dependence must be placed on the actions of the local or at best the state scale committees. It will be recalled that following the recent Illinois-Indiana strike the President asked John L. Lewis and the operators to get together and settle any inequalities in the working out of the award of the Bituminous Coal Commission, which it was asserted by the miners were responsible for the uprising in the Middle West. A meeting was held in Cleveland at which the demands of the daymen were presented and also a new set of demands of the tonnage men. After several days of conference the meeting broke up with the announcement that settlement would be had locally and the several state presidents of the United Mine Workers announced that they would call a meeting for this week to consider what demands they would make on the operators in their respective fields.

Local Agreements May Be Far-Reaching

This action, which it is understood is almost without precedent, may have far-reaching conequences, although many are of the opinion that both sides will get together again before April 1, 1922, as in the past, and that the present action is but an agreement to disagree entered into purely for reasons of policy. It is pointed out that should any marked changes in wage rates be made in any of the fields that are not at the same time matched by similar changes in the other districts there will be a grand mixup when they do get together again to handle the central field as a whole. The differentials and relationships between local fields have been most zealously guarded both by miners and by operators for many years and all previous attempts to set any of them aside have failed.

Of particular interest is the statement of John L. Lewis that there will be no general strike, although local strikes may be expected—some are in effect already —and that the whole matter can be adjusted without inconvenience to the public. These local strikes are certain to decrease production, however.

As the joint conference now ended was called by President Wilson for the purpose of adjusting inequalities in the present wage-scale agreement, operators and miners at the close of the session sent separate telegrams to the President advising him of their failure to reach an agreement.

The operators' telegram to President Wilson was as follows:

At your request the scale committee of operators and miners of the central competitive field met at Cleveland to consider and attempt to adjust any inequalities in the existing contract resulting from the award of the bituminous coal commission. The miners contended that the day and monthly men had not received an equivalent advance that the award allowed the tonnage men.

In order to meet the situation in its broadest sense and in conformity with your suggestions, the operators proposed to advance this class to the equivalent of that granted the tonnage men in machine mining, this class having received the largest percentage of advance.

The miners refused to accept, and demanded an advance of $1.50 per day, which, if granted, would have created further inequality, to the disadvantage of the tonnage men.

This would lead to more serious trouble and dissatisfaction in districts in full operation under contracts entered into between operators and miners.

The operators then proposed that the question in dispute be submitted for final settlement to a commission, as suggested in the report of the bituminous coal commission. This proposition was also rejected by the miners. Finding ourselves hopelessly deadlocked, we regret to report that we were compelled to adjourn *sine die*.

MICHAEL GALLAGHER, Chairman.

The miners' telegram to the President, sent after the adjournment of the supplemental meeting, Aug. 19, was as follows:

Pursuant to the request contained in your telegram of Aug. 10, the mine workers' representatives of the Central Competitive Field met in joint conference with the coal operators in Cleveland on Aug. 13. We have diligently applied ourselves to the task of adjusting the inequalities contained in the basic interstate agreement growing out of the award of the Bituminous Coal Commission. We have found it impossible to reach an agreement with the coal operators of the Central Competitive Field bearing upon the issues involved.

There is no controversy affecting any principle but merely a difference of opinion as to what constitutes an inequality and the degree to which it should be adjusted.

As a consequence, the joint interstate conference adjourned last night without decision. While this circumstance may be regarded as unfortunate, I am of the opinion that there is no necessity for any public apprehension.

There are reasonable grounds for the belief that the questions at issue between the operators and miners may yet be harmonized through the instrumentality of agreements which may be consummated in the individual coal-producing districts without inconveniences to the public. The sincere efforts of the representatives of the mine workers will be promptly exercised to the application of this policy.

JOHN L. LEWIS,
President United Mine Workers of America.

Speculation in Tidewater Coal To Be Stopped

New Rules Issued by Tidewater Exchange—Railroads To Make More Stringent System of Permits—All Legitimate Shippers Protected

FOR several weeks the National Coal Association has been working on the problem of preventing speculation in coal shipped to tidewater. A special committee, of which W. J. Andrews is chairman, has been studying the question from all angles and this committee on Aug. 18 presented the result of its findings to a meeting in Washington at which were present in addition to the members of the committee, A. G. Gutheim and D. J. Spangler, representing the American Railroad Association; Messrs. Howe and Graham, representing the Interstate Commerce Commission, and Mr. Owen, president of the Tidewater Coal Exchange.

It is understood that the consensus of opinion was that steps were necessary to make it impossible for the promiscuous dealer in export coal to tie up equipment and otherwise interfere with the orderly processes of shipments in his effort to play the coal market. It is generally understood that many who have never seen a car of coal except from the car window have been trying to reap an unreasonable profit in the export market and although they are new at the game, they have been adept in finding ways to tie up credits in the pools and hold cars for speculative purposes. The conclusion of the Andrews committee was that changes should be made in the rules and regulations of the Tidewater Coal Exchange that would prevent such manipulation. These changes have been made and are given in full below.

It will be noted that no change has been recommended on existing tidewater coal demurrage tariffs, although there was some desire to decrease free time and increase detention charges. It was particularly emphasized that more effective embargo and permit regulations should be had but because of the different conditions at each port and pier, these are to be left to the officials of each road. If the desires and recommendations of the committee are followed by the roads it will be exceedingly difficult for anyone to load coal for tide unless he has a boat ready to receive it, which means that he cannot hold the coal for speculation and cannot tie up cars.

Changes and additions to rules and regulations Tidewater Coal Exchange, Inc., adopted by the Executive Committee at a meeting held in the office of the exchange, New York City, Thursday, Aug. 19, 1920.

Change Rule 27 to read: "The account of a member in one designated pool shall not have any bearing on his account in another pool at the same or other piers, unless said member neglects to make up existing shortages; except that failure to take delivery of credits available for dumping in any pool shall be sufficient cause for embargoing shipments for member's account to all pools at all ports as provided for in Rule 30. Members, however, may be permitted to offset overdrafts in one pool with shipments made to the same pool at another pier, subject to the approval of the commissioner or his deputy.

"In the case of a member of the Exchange having a debit in a given pool, he may be permitted to make good the debit by the exchange of the same or higher quality coal at the pier at which the debit exists or at any other pier, subject to the approval of the commissioner or his deputy."

Change Rule 30 to read: "Failure of a member to provide vessels in which to transport coal from any pier shall be sufficient cause for the commissioner or deputy commissioner to request the issuance of railroad embargoes prohibiting the forwarding of coal to the exchange for his account. Request on the railroad for modification or cancellation of such embargo will not be made until such member has given satisfactory evidence to the commissioner or his deputy that he has made proper arrangements for vessels."

Add to Rule 32: "The transfer between members of actual cars will not be permitted. The transfer of tonnage credits will only be made upon authority of transferer in writing and acceptance by transferee in writing and upon transferee furnishing satisfactory evidence of his ability to immediately furnish vessel for dumping."

Add to Rule 33: "Upon failure of any member to dump credits available for dumping promptly the commissioner shall direct him in writing to dump such credits immediately. For failure to dump such credits within forty-eight hours after date of such notice a penalty of ($.10) ten cents per ton per day on credits not dumped shall be assessed against said member and collected by the commissioner."

Daniel Willard, chairman of the Advisory Committee of the Association of Railway Executives, and Colonel D. B. Wentz, president of the National Coal Association, met in conference on Wednesday, Aug. 18, with representatives of the Commission on Car Service of the American Railroad Association, the National Coal Association, the tidewater coal-carrying lines serving ports at Hampton Roads and north, representatives of the various tidewater coal exchanges, and the president of the American Wholesale Coal Trade Association, to consider what more effective means could be adopted to reduce to a minimum the accumulation of cars of bituminous coal awaiting transshipment at tidewater, and to determine the number of cars required in regular service in that traffic.

The conference considered particularly a report of the Special Committee of the National Coal Association in the matter of shipment of tidewater bituminous coal, and unanimously reached the conclusion that such changes should be made in the regulations of the Tidewater Coal Exchange which handles shipments through New York, Philadelphia and Baltimore, as would result in penalizing the holding of bituminous coal by individual members of the exchange beyond the free time permitted in established tidewater-coal demurrage tariffs. Further than this, the meeting unanimously agreed that, as the only effective means of adequately controlling the situation, all tidewater coal-carrying lines should immediately embargo the movement of tidewater coal and simultaneously provide for the acceptance of such traffic only upon permits to be issued by the tidewater bituminous coal terminal railroad.

It was recognized that the issue of the permits must depend in the first instance upon transportation conditions upon the railroads concerned, but beyond this it was unanimously agreed that no permits should be granted except upon a definite showing that the coal upon arrival at the pier at tidewater would be unloaded into vessels with reasonable promptness, this ability on the part of the permittee to be ascertained by his showing as to vessels under charter and his record in meeting the conditions of permits heretofore issued.

The meeting also agreed, without dissent, that the issue of permits should be to the loading mines, with provision made that if the amount to be loaded was exceeded the mine so violating the permit should be penalized in its car supply so long as the coal so billed

without permit remained unconsigned elsewhere and undisposed of. The purpose of the arrangement is to prevent unnecessary delay to equipment and to promote transportation, and these recommendations are to be utilized with that in mind.

Rail Shipments of Coal to New England Fall Behind Last Year's

IN CONTRAST with the tidewater movement to New England, rail shipments through the Hudson gateways declined sharply during the week ended Aug. 14. Cars forwarded through the five gateways of Harlem River, Maybrook, Albany, Rotterdam, and Mechanicsville, as reported to the Geological Survey by the American Railroad Association, numbered 4,860 as against 6,732 during the preceding week. For the first time since June 26 the movement was smaller than for the corresponding week of 1919. In spite of the decrease, the week's performance was 45 per cent above the average for the first six months of the year.

CARS OF BITUMINOUS COAL FORWARDED THROUGH HUDSON GATEWAYS DESTINED FOR NEW ENGLAND POINTS (*a*)

Week Ended	1920	1919
July 24	7,033	4,527
July 31	6,358	4,879
Aug. 7	6,732	4,643
Aug. 14	4,860	5,064

(*a*) Furnished by courtesy of the American Railroad Association.

Reported Destination of Coal Dumped at Hampton Roads

THE only port for which information is at present available as to the destination of coal dumped over tidewater piers during the week of Aug. 14 is Hampton Roads. Reports to the Geological Survey from the three exchanges at that port, given in the following table, indicate a decline in the tonnage handled for New England account and a slight increase in the quantity exported:

DESTINATION OF COAL DUMPED OVER TIDEWATER PIERS AT HAMPTON ROADS
(In net tons)

Week Ended	Coastwise to New England(*a*)	Exports	Bunker(*b*)	All Other(*c*)	Total Dumped
July 10	149,000	295,000	71,000	11,000	526,000
July 17	108,000	262,000	65,000	10,000	445,000
July 24	148,000	332,000	67,000	6,000	553,000
July 31	136,000	392,000	68,000	8,000	604,000
Aug. 7	134,000	326,000	75,000	12,000	547,000
Aug. 14	116,000	358,000	71,000	6,000	551,000

(*a*) Cargo coal only. A small amount of other coastwise coal is included. (*b*) All bunker, whether foreign or domestic. (*c*) Includes coal used inside capes, and other local and coastwise tonnage, coal for the Navy and for Panama.

Coal Shipments to New England Under Service Order No. 11

ACCORDING to statements furnished by the American Railroad Association, the results obtained under the amended order giving preference to New England (Service Order No. 11, effective Aug. 2) have been as follows: Short on Aug. 7 (at end of first week), 1,588 cars; short on Aug. 13 (near end of second week), 1,621 cars.

As the initial assessment under the order was 923 cars per day, this means that the cumulative movement was 1.7 days behind at the end of the first week, and 1.8 behind at the end of the second, or to put it another way, shipments during the first two weeks amounted to 84 per cent of the program.

Indiana Miners Refuse to Return to Work—Practically Entire Field Idle

ORDERS of officials of district No. 11, United Mine Workers of America, issued Aug. 21, that men now out return to the mines have been disregarded and practically the entire Indiana field is idle. The field is faced with the closing of the nine mines still at work and a 100-per cent state of non-production. The present situation is the result of orders given by the miners' officials with one eye shut.

An official of the operators said: "The orders to return to work were given with a wink, and I doubt seriously whether they were intended to be complied with." The railroads are reducing consumption to a minimum. For the time being coal is coming regularly from the Illinois and Kentucky fields and practically all of the railroads of the state are supplied temporarily with sufficient coal for comfortable operation. Some of the rolling stock, however, is being diverted to other fields.

Members of the Indiana Bituminous Coal Operators' Association at a meeting Aug. 23 in Terre Haute approved a report of the scale committee on the recent wage conference at Cleveland and agreed to meet a committee of the miners and negotiate a new scale as regards the pay of day and monthly men. The action was almost unanimous, but came after many of the operators opposed the signing of any more contracts with the union in view of the frequency with which old ones have been disregarded. The operators agreed to co-operate in promoting increased production.

Weekly Movement to Tidewater

TIDEWATER shipments declined slightly during the week ended Aug. 14. The total number of cars dumped over tidewater piers (in part estimated) according to reports furnished the Geological Survey by courtesy of the American Railroad Association, was 25,740, as against 27,464 during the preceding week. That the movement was nevertheless very heavy is seen from the fact that it exceeded by 2,120 cars the weekly average for July.

CARS OF BITUMINOUS COAL DUMPED WEEKLY OVER TIDEWATER PIERS AT THE FOUR NORTH ATLANTIC PORTS AND CHARLESTON (*a*)

Week Ended	New York	Philadelphia	Baltimore	Hampton Roads	Charleston	Totals
July 24	8,424	3,456	3,683	9,601	526	25,690
July 31	8,685	4,211	3,935	10,512	118	27,461
Aug. 7	10,065*b*	3,151*b*	4,580	9,394	274	27,464
Aug. 14*c*	9,026	2,878	3,787	7,716	333	25,740

(*a*) Furnished by courtesy of American Railroad Association. Includes coal destined for bunker, for New England, or other coastwise and local use, and for export. (*b*) Revised. (*c*) One day estimated, subject to revision.

Six More Warrants Charging Profiteering Bring Total to 52.

SIX more warrants charging profiteering in the sale of coal were issued Sunday night, Aug. 22, at the instance of the U. S. Attorney for the Southern District of West Virginia, according to an announcement made by A. E. Hayes, special agent of the Department of Justice. This brings the total number of warrants issued against coal companies in this district up to fifty-two.

The companies against whom warrants were issued on Sunday are the Chesapeake Mining Co., of Handley; Silush Coal Co., Charleston; Seng Creek Coal Co., Charleston; Dry Branch Coal Co., Dry Branch; Coalburg Colliery Co., Ronda, and Big Creek Coal Co., Big Creek.

Federal Trade Commission May Suspend Publication Of Monthly Coal-Cost Reports

Number of Operators Making Voluntary Returns Insufficient to Make Commission Data Representative—National Coal Association Charged With Breaking Agreement in Bringing Legal Action

IN ISSUING its fifth monthly bulletin on bituminous coal costs, covering May, 1920, the Federal Trade Commission announced on Aug. 25 the possible suspension of the monthly publication, which informs the operators, the miners, the consumers of coal and the public at large with respect to current average production costs and sales realization prices at the mine for bituminous coal. The likelihood of suspension is due to a reduction in the number of operators reporting voluntarily, pending final court decision as to the commission's powers to require the reports. Unless sufficient reports are received to be representative the commission prefers to discontinue publication rather than risk giving out figures that may prove misleading.

The announcement follows:

"When the Federal Trade Commission in January, 1920, resumed the collection of information as to the cost of bituminous-coal production it was upon the understanding by the commission that the cost of production and sales-realization figures would be supplied by the coal operators. The coal operators had a written opinion by the counsel of the National Coal Association to the effect that the commission had the lawful power to collect this information. The commission was supplied with copies of this brief.

Commission Agrees to Legal Tests

"The commission proceeded accordingly, but there came a change on the part of the association. The commission was asked to make possible the bringing of a series of test suits which would represent all variations of the coal industry with reference to the interpretation of the interstate commerce clause. It was understood at the time by the commission and the officers and counsel of the National Coal Association that the necessary default notices and other acts and proceedings to complete the record in four test cases should be completed by the commission and simultaneous actions brought thereon, and that pending these suits the National Coal Association would take no steps to discourage or interfere with voluntary cost reporting by operators.

"Instead of bringing four suits, testing all the issues, the National Coal Association brought but one suit (the Maynard Coal Company suit), in which the questions involved were most favorable to the complainant, and the other three suits have never been started.

"Following the issue of the injunction in the Maynard suit the Federal Trade Commission invited voluntary co-operation by the coal operators in supplying the necessary reports and made it clear that pending final decision compulsory process or the collection of penalties would not be applied in case of failure to file reports.

"The commission received reports from 1,589 operators for January, 1,431 operators for February, 1,081 operators for March, 812 operators for April and 680 operators for May. During the Fuel Administration period 2,482 bituminous operators reported to the commission. The value of these current coal-cost bulletins depends entirely upon the relative quality of the figures contained therein, and when it appears that out of the total operators an insufficient number of reports are made, the figures obtained fail to maintain their relative quality. This condition seems to be realized and publication of the cost bulletins must cease unless the number and character of reporting operators shall be such as will insure that the bulletins are representative and not misleading.

"These cost bulletins have been widely published and the National Coal Association, as well as individual operators, has constantly made use of these figures and facts. Thus the reports which have voluntarily been made by that group of the operators which undertook to share the labor of preparing them have been utilized to the advantage of that other element in the coal industry which has discouraged the making of these reports.

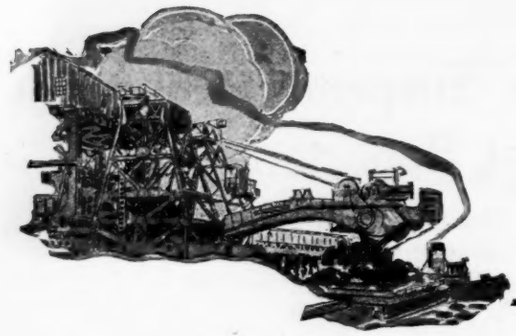
"The commission believes that the ascertainment of facts relating to cost of production in such a fundamental industry as that of bituminous coal production is of the greatest usefulness to the industry. It is likewise obviously of benefit to the public to know what the cost of coal production is, and what the sales-realization price at the mine is, and, being informed as to these factors, to determine whether any intervening agency is occasioning an undue rise in price to the consumers.

Continuance Depends on Number Reporting

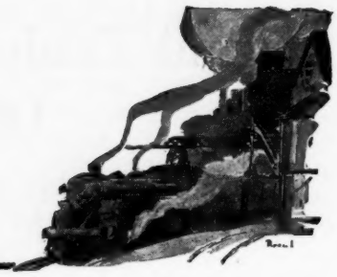
"If a sufficient number of operators report their production costs, the commission will continue the issue of monthly and quarterly cost bulletins. Otherwise, while still continuing to solicit these reports for the continuity of these records the issue of the coal-cost bulletins will be discontinued pending a judicial decision of the objections raised."

The May bulletin, which, as pointed out in the announcement, is perhaps not representative of the large number of operators who failed to report, shows the average sales, realizations and reported costs of 680 operators producing about 20 per cent of the estimated total bituminous coal mined in the seventy-four mining districts of the United States during that month. Revision of costs usually reduces reported costs only a few cents per ton. All figures in the bulletin are based on tons of 2,000 pounds.

The average sales realization of the 680 operators reporting to the commission for May was $3.31 per ton, while their total reported mine cost amounted to $2.77. Of the latter amount $2.07 represented labor costs per tion and the f.o.b. mine cost per ton is the "margin," (or overhead). The difference between the sales realization and the f.o.b. mine cost per ton is the "margin," which was 54c. per ton. These average figures for May did not vary more than 5c. per ton in sales realization, in costs, or in margins from the averages shown for 812 operators in April, which is an important fact if that same relation holds for non-reporting operators.



Production and the Market



Weekly Review

Good Car Supply Continues—Heaviest Production Reported Since January—Growing Labor Troubles May Curtail Output for Next Week — Prices Stiffen — Tonnage to Lakes Again Exceeds One Million Tons

PRODUCTION of bituminous coal rose in the second week of August to 11,728,000 net tons, according to figures of the Geological Survey. This is the highest production figure since last January, an increase of 1,300,000 tons over the preceding week and also exceeds the last pre-strike week by some 848,000 tons. Anthracite production showed a slight increase. Beehive coke increased to 417,000 net tons, compared with 382,000 the preceding week.

How long this increased rate of production can be maintained remains to be seen. Late reports from the field indicate that loadings are somewhat lighter. The inability of operators and miners to reach an agreement at the recent Cleveland meeting is already resulting in unauthorized strikes in the Central Competitive Field. Many Illinois and Indiana operations are down and the growing disaffection may be expected to seriously effect production.

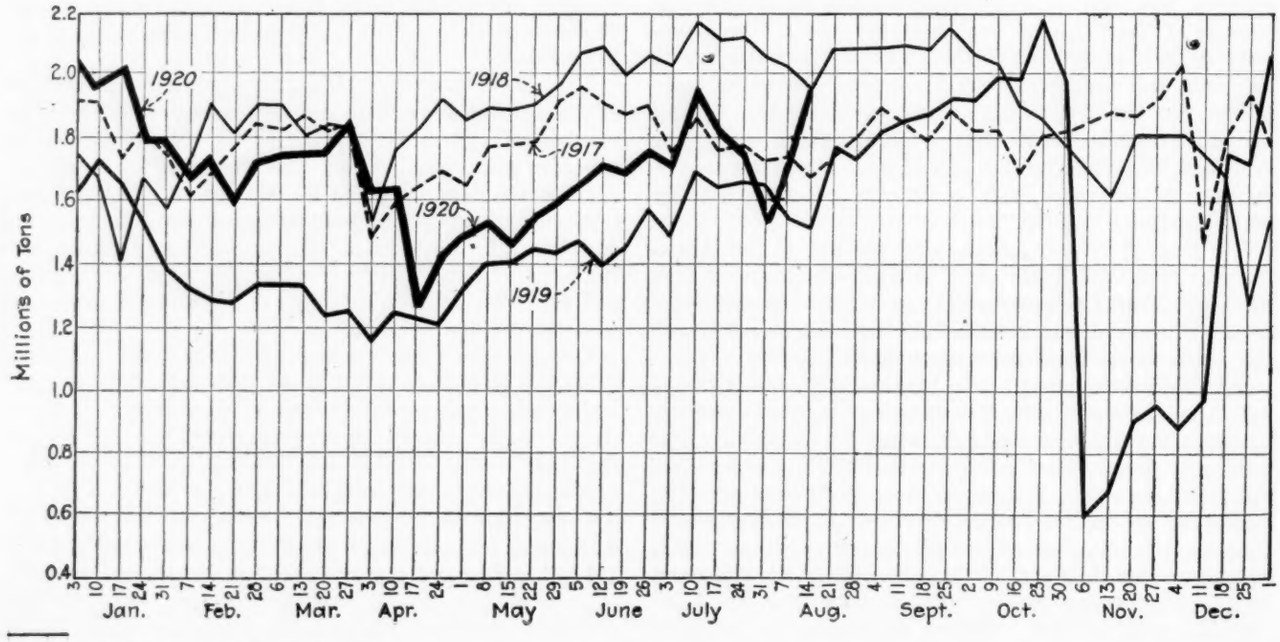
In the face of this anticipated labor trouble prices have stiffened, especially in the Middle West. Buyers who had adopted a policy of awaiting developments were again forced into the active market. The result is that a distinctly easier market has again advanced under the heavy demands being made upon it.

Shipments to priority points are progressing satisfactorily. Export tonnage is again advancing, the better production having increased tonnage available for non-preferential points. Stock piles are gaining as a result. Preliminary figures for the week ended Aug. 21 show Lake dumpings of 1,090,000 tons, as compared with corrected figures for the second week of August of 994,426 tons. While the dumpings are still behind the scheduled rate, little fear of a shortage in the Northwest this winter is now felt.

Lake Coal Dumped Season to Aug. 21
(NET TONS)

	Cargo	Fuel	Total
1919.....	14,373,948	644,422	15,018,370
1920.....	9,118,159	584,638	9,702,797

Average Daily Production of Bituminous Coal*



*From weekly report of Geological Survey.

Reports From the Market Centers

New England

BOSTON

Heavier Receipts Allay Anxiety About Fuel — Rumored Assigned-Car Order Has Been Continued — All-Rail Movement Is Heavy — Order 11 Is Not Working Smoothly — Hampton Roads Despatch Is Excellent — Receipts of Anthracite Gain.

Bituminous—As compared with 60 days ago a pronounced change has come over the market. Receipts have bulked so large since July 15 that buyers show much less concern over the future of the market. Prices will have a long way to drop before anything like normal conditions can prevail, and much greater stocks will have to be accumulated before consumers here will be cared for as in ordinary years.

Just now rail coal from Pennsylvania is quoted higher even than shipments by water from Hampton Roads or Baltimore. Should there be free offerings of water coal in the next fortnight, there would doubtless be enough reduction in spot prices by rail to offset the advantage water coal has within a 50-mile radius of Boston.

It is rumored here that the assigned-car order has been continued for another 30 days and this will of course have its bearing on car supply in certain districts. The object of the order was to provide utilities, etc., with coal for current consumption and surely in another 30 days most power plants and other public requirements will have accumulated 60 to 90 days' supply.

All-rail movement is remarkably heavy, shipments pouring in well up to gateway capacity. To such extent is this true that there have even been cancellations of purchases made in May and June. Better deliveries on contract by tidewater shippers have also had their bearings on this new development.

Railroad confiscations occur much less frequently and are now confined to crippled cars of which there is an astonishingly large number.

Service Order 11 is not yet working smoothly. Apparently there is little coordination among shippers, or coal would not have been allowed to accumulate in such volume at some of the piers. Liberal use of the embargo power is expected to correct this situation. Whether New England will absorb much increase over shipments in their present volume remains to be seen.

At Hampton Roads despatch is excellent. Coastwise steamers are loading regularly in 24 hr. or less and the August tonnage for Providence, Boston and Portland will even exceed that for July.

Current quotations on bituminous at wholesale range about as follows:

	Clearfields	Cambrias and Somersets
F.o.b. mines, net tons	$10.00@11.50	$10.75@12.00
F.o.b. Philadelphia, gross tons	13.25@14.75	13.90@15.25
F.o.b. New York, gross tons	13.50@15.00	14.25@15.50

On cars Boston, high volatile grades via Hampton Roads have been quoted at $13.50 per gross ton.

Anthracite — Receipts of domestic sizes both by rail and water continue to show gains. The recent arrangement made by the New Haven road for a given number of cars per day from the anthracite roads is not yet working smoothly. Certainly the area served by the New Haven has been kept on a starvation basis since Jan. 1. The contemplated addition of new motive power will considerably impress the New Haven service.

The general advance in railroad rates is expected to cause another wave of retail advances throughout New England. Communities to the eastward where rates are so much higher all-rail will suffer particularly. Twenty-dollar coal at retail is by no means out of the question in many parts of New England this fall.

Tidewater

NEW YORK

Domestic Anthracite Demand Increases with Approach of New Freight Rates— Stronger Steam-Coal Situation Due to Bituminous Scarcity — End of Marine Workers' Strike Is Expected To Help Bituminous Situation — Market Improves and Increased Demand Expected.

Anthracite—Receipts of the domestic sizes are quickly absorbed. There is more activity in the demand and shippers are receiving more orders for these coals. The increased interest shown is attributed in many circles to the increase in freight rates recently granted the railroads and which are soon to become effective, followed, it is expected, by an increase in the price of coal to the consumer.

The resumption of towing from Port Reading, following the settlement of the harbor boatmen's troubles, will aid considerably in improving the local situation as under normal conditions much coal is delivered locally from that port.

Demand for egg, stove and chestnut continues to be strong. Some dealers are now complaining of the lack of chestnut, while egg appears to be strongest in demand.

Independent producers find a steady market for their product. Buyers continue to invade the regions and are said to be bidding high for the coal.

Sections of the outlying territory surrounding this Tidewater, but, not dependent upon Tidewater delivery, appear to be well supplied. Most yards have full bins and consumers say they have no difficulty in getting deliveries.

Much of the strength in the steam-coal market is attributed to the scarcity of bituminous here. Buckwheat and rice are comparatively short and quotations for these two sizes are much stronger. It was also announced that the change in freight rates had had its effect in stimulating the demand.

Quotations for buckwheat No. 1 of the best grades ranged from $5.65 to $6 at the mines. Rice coal was held firm, quotations ranging from $4@$4.50, while barley, the longest in supply, was held around $2.25@$2.50.

Quotations for company coals, per gross ton, at the mine and f.o.b. New York Tidewater, lower ports, are as follows:

	Mine	Tidewater
Broken	$7.50@$7.65	$9.35@$9.50
Egg	7.50@ 7.65	9.35@ 9.50
Stove	7.75@ 8.00	9.60@ 9.85
Chestnut	7.80@ 8.00	9.65@ 9.85
Pea	6.05@ 6.45	7.80@ 8.20
Buckwheat	4.00@ 4.10	5.75@ 5.85
Rice	3.00@ 3.50	4.75@ 5.25
Barley	2.25@ 2.50	4.00@ 4.25
Boiler	2.50	4.25

Quotations for the domestic coals at the upper port are generally 5c. higher on account of the difference in freight rates.

Bituminous—The ending of the marine workers' strike is expected to have a beneficial effect on the local market and a further softening of prices for loaded boats is to be expected.

The situation shows some change for the better. Inquiries come oftener and shippers look for an increased demand for coal. While it was expected that New England would be in the market for a heavy tonnage, conflicting reports are received as to the amount of coal needed.

Coalmen were not inclined to voice their opinion regarding the action taken in Washington on Aug. 19, by which it was agreed to place an embargo on the movement of coal to tidewater, except upon a definite showing that the coal upon arrival at the piers would be unloaded into vessels with reasonable promptness. Official notice of the action taken was awaited.

Troublesome conditions are reported from the mines. The workers are reported as being dissatisfied and frequently change their scenes of employment. The car supply is bad, some mines receiving less than 50 per cent of their normal requirements.

Early in the past week low-volatile coals were being quoted at from $12@$12.50 at the mines. Later on Pool 10 was quoted at around $12; Pool 11,

around $11, and Pool 18, around $10. In the harbor Pools 10 and 11, mixed, were quoted at around $17.75, while Pool 18 was quoted around $15.65 alongside.

BALTIMORE

Permit System for Exports Should Improve Situation — Prices for Soft Coal Break—Anthracite Price at Retail Seems Sure To Run Around $15.

Bituminous—A period of unusual stress and uncertainty exists here. With piers congested and the charge being flung openly at public hearings that the present jam is due to speculators shipping to tide and then dickering for highest prices to ships that must get away or pay heavy demurrage charges, the railroad action instituting a new kind of embargo here was but a natural outcome.

Instead of shippers being given permits to dump so many cars over the piers permits will be given to ship from the mines, only when the shipper furnishes proof that he will have vessels here to take the coal promptly. It is thus planned to break up excessive speculation and at the same time make a quick turn-around of cars.

A meeting called by the mayor to take up the question of bunkering a-stream vs. bunkering at the piers also discussed this subject and a committee was named to go over the entire situation. Meanwhile leading coal men got into the public discussion, and while there was much difference of opinion the general belief was that some action was needed to clear up the serious transportation mix-up that has followed Government priority and railroad embargo orders. It was openly stated at the meeting that these orders had been widely and promiscuously violated because proper supervision under the existing system was impossible.

The Baltimore & Ohio R.R. is giving 50 per cent. or better car supply at this time. This fact, with prospect of elimination of speculation at tide and the amount of coal now on reserve at tide or rolling—between 4,000 and 5,000 cars destined for or at this point—has caused a slump. Coal on the Baltimore & Ohio R.R. is quoted over a wide range, practically the same fuels at times being quoted at $8.50@$10 f.o.b. mines, and on New England sales from the run of Service Order 11, as low as $7@$8. The prices on the Pennsylvania are holding close to $9@$10 f.o.b. mines, and largely at the latter figure, presumably because of inadequate run of cars to the mines on that system.

Some 40 ships are still here awaiting export coal despite heavy loadings, which for the first seventeen days of the month are in excess of 330,000 tons.

Anthracite—Some coal is now beginning to filter through, but is declared to be largely of the premium character. The new freight rate for Baltimore with a tax of 11c., makes a total of $3.75.

As company coal of the most popular grade used is $7.85 and independent coal is as high as $9, retail stove prices will likely be about $14.50@$15.50. If the rate of less than one-third of company coal delivered here continues it will be difficult to hold retail prices to $15 even before any other wage increase is added.

The trade is interested in the talk of "stabilizing" prices through government action, with a plan of equalizing both company and independent coals to the advantage of the public, but is frankly skeptical of seeing any early change in conditions and is planning business on the higher cost basis.

PHILADELPHIA

Reading Embargo to City Being Modified, but Much Anthracite Goes to Northwest — Consumer Demand Is Strong as New Freight Tariffs Come In—Stove Leads—Steam Coals Are in Strong Position—Bituminous Is Somewhat Improved with Prices Slightly Easier.

Anthracite—The trade approaches the month of September with the smallest stocks in the yards for years. On the whole there is little improvement in the situation. The embargo via the Reading to this city continues to be modified and the embargo may be removed in its entirety quite shortly.

Light shipments have come in since the middle of June and the producers are giving particular attention to consignments to the Northwest, particularly the larger concerns who have docks on the Lakes.

The shippers are daily receiving the new tariffs covering the increases in freight which are to take effect on Aug. 26. Up to this time the tariffs only cover rates to interstate points.

The consumer demand is still strong and seems to have swung now almost exclusively to one size—stove. Most dealers have small stocks of the other sizes.

The retail prices at this time, on an average for the city, run: $13 for egg; $13.50 for stove and nut; and $11.25 for pea. Should the new freight rates become effective this week these prices will have to be advanced from 60 to 80c a ton.

All the shipping offices report the strongest kind of demand for family sizes from outside markets, and some of the smaller producers claim they could sell their entire output at $12 a ton at the mines, which is about $3.00 above what they are charging the local trade.

The steam coals are shaping up to the point where buckwheat and rice of the White Ash grades are really scarce at company figures. Independents are getting well over $5 on such quantities of buckwheat that they have to offer spot and about $3.50 for rice. Barley can still be had at circular of $2.25. The above are mine prices. At tide there has been little trouble in getting $6 for buckwheat and rice at $4.75.

Bituminous—The bituminous situation seems to have improved, at least from the consumer's standpoint. However, prices still tend to shade downward and there has been a fair amount of coal coming in to meet the current demand. Under the various priority orders, the utility plants are getting into good condition.

Up to this time gas coals have been extremely scarce. The claim was made that tide embargoes at southern ports had forced this coal out. The Baltimore & Ohio has just had an embargo placed on line shipments to this territory and this has greatly interferred with the movement of coal. The Fairmont prices generally have run close to $10@$10.30.

In the Pennsylvania steam grades, ordinary coal has recently been offered around $10, with fair grades at $11 and some of the best at $12. There have been some reports of sales at $13.

There is only a fair volume of trade at tide, yet even that has been more than one of the roads could handle, as they were compelled to hold up shipments to one of the piers. The permit system is still in force and there is not likely to be increased activity until this plan is abandoned.

Lake

BUFFALO

Bituminous Prices Decline Slowly—Demand Is Light—Steady Price Decline Is Anticipated—Anthracite Is Moving Slowly.

Bituminous—Shippers report that conditions are improving every day, but the change is slow. About $9 at the mines is a pretty fair average.

It is odd that the shipper has become the bear in the market. However, they know that conditions can never become normal till coal again sells at least as low as $6. It is necessary to come down to this level to stop wildcat scheming and selling at prices that encourage the miner to demand exorbitant wages.

The car supply is improving slowly. The more hopeful shippers claim that under the present active management of the railroads the car shortage is bound to disappear slowly.

Much uneasiness exists on the part of certain members of the trade who are trying to carry on a legitimate business. The Government has been expected to put a stop to wildcat trading, but beyond a threatened prosecution of those who are guilty of taking advantage of the consumer nothing has been done. Shippers who have been called in to advise on the matter report that consumption is now less than production. At that rate the trade ought to right itself unaided before long.

Anthracite.—Conditions are not improved. Coal is not coming in as it should and before long it may be found impossible to get coal enough to the upper-lake ports to meet the winter needs in that territory. This shortage makes it necessary to cut down local and rail supplies and as a consequence consumers and distributors are complaining.

Some operators are demanding as high as $13 at the mines for any domestic size. The persistence with which these quotations appear shows that they are getting their price. At last accounts the strike in some of the leading anthracite mines continues, with no prospect of immediate settlement.

Lake.—Shipments by Lake for the week were 84,500 net tons, a decline of 34,000 tons as compared with previous week's dumpings. Of this amount 29,800 tons cleared for Milwaukee, 18,000 tons for Chicago, 17,400 tons for Duluth and Superior, 15,000 tons for Fort William, 3,350 for Manitowoc and 1,000 tons for Sheboygan, Mich.

Coke.—Trade is still light, so far as single orders are concerned. Jobbers get some business from those who need a special grade and they have to pay heavily for all they get, $20 for 72-hour Connellsville foundry, $19 for 48-hour furnace and $17.50 for off-grades.

Inland West

ST. LOUIS

Local Steam Situation Is Fairly Good, but Domestic Is Growing Acute—Conditions West of River Are Bad—Northern Markets Are Paying Premium Prices.

The local steam situation is fairly good; there is enough coal coming in to take care of requirements but little tonnage is being stored. The domestic condition is growing acute. Only the larger dealers, who have contracts, are able to get Mt. Olive and Standard coal. The tonnage of Carterville coming in is next to nothing.

This puts the burden of the retail trade on five or six large dealers, and between 30 or 40 small dealers have their yards tied up with no coal, and the people who depended upon them have no prospects of getting any.

Retail prices here on Carterville are $8.50@$9; Mt. Olive $7@$7.50, Standard $6@$6.25. Mine prices on Carterville range from $4.50@$6; Mt. Olive to regular trade $3.50@$4; and Standard sells from $4@$7.

Buyers from Chicago, Detroit, and the North and East were paying as high as $7.50 for all sizes of Standard coal on Aug. 19, and possibly two-thirds of the tonnage is moving to these markets, whereas in normal times it moved into St. Louis and Missouri.

The conditions west of the river is worse now than at any time in the past. Twelve mines in the Standard field are on strike over the Cleveland disagreement. Nearly every mine on the Illinois Central has been idle for the past four days on account of no cars.

Car supply in the Standard field is from 30 to 40 per cent. In the Mt. Olive field, it is about 60 per cent. Railroads are drawing heavily on both fields. Throughout the main Carterville field, as well as near Duquoin, about 50 or 60 per cent car supply prevails with conditions in general satisfactory.

The labor trouble in Franklin County at West Frankfort has quieted down. There are no receipts of anthracite, smokeless, or Arkansas at St. Louis, and no coke available.

INDIANAPOLIS

Car Situation Is Not Improved — Reserves Are Low—Industries Face Shut-Down—Retail Demand Exceeds Available Supply.

The car situation has improved so slightly that it is hardly perceptible. The supply of free coal is short and prices continue high. The demand is very heavy and will be accentuated shortly when those industries which have small reserves on hand have exhausted their supplies. At the present time the large furniture factories just south of Indianapolis are facing an indefinite suspension because of fuel shortage.

Wholesalers in the entire central section of the state report that they are unable to get coal. Prices range from $7.50@7.75.

Retailers are puzzled by the situation. Unable to obtain any coal in sufficient amounts to build up their sadly depleted stocks, they are advising the public to postpone the purchasing of winter's supply until later in the season. Several recent interviews with prominent retail dealers indicate that coal prices will not be so high this fall and supplies will be more plentiful.

MIDWEST REVIEW

Threatened Strike Affects Production—Many Mines Are Idle — Prices Rebound—Lake Shipments Are Heavy.

A strike in the Illinois and Indiana coal fields again threatens our production. The joint scale committee of operators and miners of the Central Competitive Field have adjourned sine die and no agreements were reached during the entire course of the conference. The leaders of the United Mine Workers are planning to submit their case to President Wilson, setting forth that the operators failed to make any proposition satisfactory to the demands of the miners. Word from the conference in Cleveland reached the more remote mining districts and as a consequence, but very few mines are running either in Illinois or Indiana. This is extremely unfortunate, because the railroads appear to have been in a position to supply the mines with a fairly respectable car supply. Last week there was a decided tendency toward lower prices, but with this new strike in immediate prospect, prices are stiffening. Prices on steam coal are now around $7@$7.50 per ton, at the mines.

Conditions in the Middlewest are a little better than heretofore. During the past week or so, both retailers and buyers of steam coal have had an opportunity to get hold of a little extra fuel. If this new strike continues over a week or so, what little advantage has been gained, will soon be lost.

Reports coming in from the Northwest are very encouraging. Shipments are moving to the Lakes from eastern coal fields in fairly satisfactory quantities. To counter-balance this, however, practically no coal is moving into the Northwest from the Illinois and Indiana fields, as what little coal is being produced in those districts, is being sold in the big centers or disposed of locally.

CINCINNATI

Stocks Are Ample—Car Supply Is Improved—Demand Continues Strong and Prices Remain Firm.

There is less talk about a fuel shortage in this city than perhaps in any other coal distributing center in the country. Being right on the edge of the rich coal producing fields of Kentucky, West Virginia and parts of Ohio and Indiana, coal users in this section see no need to worry.

The car supply to the mines in West Virginia has increased considerably in the past few weeks as has it to Kentucky. In Ohio the improvement is ever more noticeable.

Prices on all kinds of coal continue high with the trend towards the upward. Demand continues strong and it is anticipated that prices will remain firm.

Operators feel confident that there will be no serious shortage of coal in this section. Householders have heeded the warning of the coal men and consequently cellars are all well filled. The big industrial plants are getting coal wherever they can and there are no reports of serious shortages.

The general opinion prevails that the car shortage will improve right along and that there will be no cause to worry about winter's fuel requirements.

DETROIT

Shipments Barely Cover Current Requirements — Prices Are Firm With Further Increase Predicted — Lake Tonnage Continues Heavy.

Bituminous—Only about enough bituminous is coming into the city to supply the current requirements of plants and utilities. Detroit dealers are inclined to take a gloomy view of the outlook. They insist the deficit in coal supply is an existing condition, that car supply is not large enough to permit early improvement of this condition, while the advance in freight rates recently granted the railroads will still further advance the cost of coal.

Jobbers and wholesalers figure the advance in freight rates will increase the cost of coal transportation from the Fairmont district to Detroit from $2.05 to $2.87 a ton and that the new rate from the Hocking fields will be about $2.45 a ton.

Though the railroads apparently are confiscating less coal in transit the practice is continued to an extent that arouses considerable complaint among the local dealers.

Anthracite—Predictions are being made among dealers that anthracite will be selling in the local market next winter at $20@$22 a ton. This forecast is based on present mine prices with the increased freight rates, and a $3@$4 handling charge. The supply is far short of requirements. In most instances shipments have not been sufficiently liberal to enable the dealers to fill orders booked in the spring.

Lake Trade—Operation of the preferential ruling has given a decided impetus to move the Lake coal. The supply arriving at loading docks for several days has exceeded carrying capacity of contract vessels. Arrangements are being made to increase the available carriers.

CHICAGO

Prices Increase as Result of Threatened Strike—Supply Drops.

An attempt made about a week ago by some of the buyers of steam coal to keep prices down to a certain level was headed for success, when the unexpected happened and the industry is once more threatened with a strike. This has had a great deal of influence on the market and those operators and wholesalers who have spot coal to offer are once more able to get from $7@$9 per ton, f.o.b. mines for their product.

Usually it is not the operator who is getting these big prices, but rather the wholesaler, and especially that type of wholesaler who has recently entered the coal business with the hope of realizing large profits. Prices on all eastern coals are reported to be very strong. Anthracite coal, in the more popular domestic sizes, is bringing a price of $18.75 per ton, f.o.b. Chicago. This means at least $21 to the householder. Pocahontas is sold on a basis of $12.50, while West Virginia splints, in some cases, have reached the same levels. There are, however, a number of firms who have been established for years in the Chicago market, who are still supplying their trade with very good coals at a reasonable price. The parties who are giving the coal trade a black eye with the public are men who are anxious to get as much as they can out of the market, without any thought for the future of the industry.

These new elements in the coal market are sending men into the coal fields and whenever they find a mine running they are buying the output on a day to day basis and selling it on the open Chicago market.

COLUMBUS

Cars Are More Plentiful — Not Much Free Coal Is Available — Prices Continue High — Lake Tonnage Increases.

Railroads have been giving a better car supply with the result that the output is larger. Congestion which appeared on lines several weeks ago is improving with the exception of the T. & O. C. Ry.

The supply to the Hocking Valley district was between 75 and 80 per cent of normal. In the Pomeroy Bend district placements were about 80 per cent; Crooksville and Cambridge reported about 75 per cent supply. Eastern Ohio also showed a big improvement when the supply increased from 58 to 67 per cent.

A large proportion of the tonnage mined is still being applied on priorities. Manufacturers have been buying on the open market when possible, which accounts for the high quotations. Some manufacturing concerns have been compelled to close and scarcely any large consumer has accumulated a surplus stock.

Retail prices continue high. Hocking lump is selling from $7.50@$9.50; West Virginia splints retail about $8.75@$10.50. Pocohontas is quite scarce and little is available in the local market.

Lake trade shows a good increase during the week. The H. V. docks at Toledo for the week ended Aug. 14 loaded 176,000 tons. The T. & O. C. docks during the same week loaded 83,000 tons.

Prices at the mines for Columbus shipments are:

Hocking lump	$6.00@$8.50
Hocking mine-run	5.50@ 8.25
Hocking screenings	5.25@ 8.00
Pomeroy lump	7.00@ 9.00
Pomeroy mine-run	7.00@ 8.75
Pomeroy screenings	6.50@ 8.50
West Virginia splints, lump	7.00@ 9.50
West Virginia splints, mine-run	7.00@ 8.75
West Virginia splints, screenings	6.75@ 8.50
Pocahontas lump	7.75@ 9.50
Kentucky lump	7.00@ 8.75

South

BIRMINGHAM

Coal Is in Strong Demand, but Sales Are Limited by Short Supply — Labor Forces Are Sufficient for Larger Output—Car Shortage and Slow Movements Hamper Production.

The loading producers have no coal to sell and representative quotations are not available at this time. Such spot coal as is being thrown on the market commands a large premium.

Labor conditions at the mines are much better. Operations in the Cahaba field and other sections where strikes have been hindering production for some weeks were materially improved with proportionate gains in output except where interruptions have been caused by insufficient car supply. This latter trouble was experienced by mines on both the Southern and Frisco Rys. to a greater extent than the week before. Production was curtailed considerably at mines which would have otherwise shown largely increased tonnages. The car supply on the L. & N. R.R. remains around 45 or 50 per cent.

The movement of coal after leaving the mines is slow. Consumers are not only receiving a limited supply of fuel contracted for but deliveries are irregular and uncertain.

LOUISVILLE

Retail Stocks Show No Gain — Prices Are Firm—Car Supply Is Improved—Additional Breach of Contract Suits Are Filed.

Stocks of coal in the city are still short. Retail yards are reduced to a bare daily delivery basis and orders are being taken subject to receipt of fuel.

The Louisville and Nashville R.R. is in better shape than ever to furnish coal cars to mining districts supplying the city but a very large part of coal loaded is applied for their own use.

Eastern Kentucky coal is practically removed from the local market as it is in great demand for northern by-product plants. Western Kentucky must therefore supply the bulk of Louisville's fuel requirements this winter.

The market is practically unchanged. Demand is as strong as ever and prices remain firm.

Operators are using the inadequate car supply as a reason for curtailing some contract shipments, throwing their tonnage on the open market. This has resulted in additional suits being filed by jobbers, charging lack of good faith on the operator's part in failing to make contract shipments.

West

SAN FRANCISCO

Freight Increase May Bring Foreign Coal—Buyers Do Not Welcome Change.

Shipping men are watching with much interest the consequences of the raise in freight rates, some predicting there will be an influx of coal from Australia and British Columbia. Plenty of bottoms are available for transporting coal here by water. At present steamships are bunkered with coal brought from Utah.

In former years most of the coal used here was imported from British Columbia. Shipping men would not welcome a return to old conditions as the Utah coal is vastly superior to either the Australia or British Columbia coal. If the high freight rates militate against the handling of Utah coal, shipping men in San Francisco plan a concerted movement to compel the authorities to give relief.

Bituminous prices, f.o.b. mines, wholesale, Utah and Wyoming, per net ton, are as follows:

Stove and lump, $4.50; bunker $13.55.

News From the Coal Fields

Northern Appalachian

PITTSBURGH

Car Supplies Increase — Failure To Make Wage Agreement Makes Sporadic Strikes Not Improbable—Market Slightly Lower.

Car supplies have increased further and now approach the average that the miners are willing to load. This output would of course still be considerably below rated mine capacities.

After being in session at Cleveland almost a week the Joint Scale Committee of the Central Competitive Field has adjourned without reaching any agreement. The operators offered to advance daymen by the same percentage the tonnage-men had been advanced at the settlement early in the year while the miners reduced their demand from $2 to $1.50 a day increase.

The miners refused to concur in a set of resolutions calling upon the President to take steps for the establishment of a commission.

Prospects are that there will be some individual strikes without direct authorization by the national officials of the United Mine Workers.

The labor situation is becoming the main factor in the coal market, for there has been only a slight decline in the past week. This view is shown by the fact that in the Connellsville region, which has the distinction of being non-union, the market has declined sharply, some coal being available at $6@$7. This is partly due to the Baltimore & Ohio R.R. refusing to accept coal for shipment east. The Pennsylvania Ry. accepts coal for the east and coal on its divisions has declined very little. The Pittsburgh district market has declined and is quotable at $9@$10 per net ton at mine, against $10@$12 formerly quoted.

UNIONTOWN

Excellent Car Supply—Pier Embargoes and Slackened New England Demand Soften Local Prices — Labor Supply May Control Future Output — Thousands of Workers Have Emigrated.

With a continuation this week of the excellent car supply that has been a feature through August, embargoed pier shipments and at least a temporary saturation of the New England markets has softened the local coal and coke prices.

Pier embargoes furnished the key to the price drop, coincident with a slackening of the New England demand on account of reported rail congestion. Lake shipments continue, with the local team trackers getting some fair car consignments off to that mandatory destination early in the week.

Coal-car placement has been excellent, with the Monongahela Ry. and Redstone branch of the Pennsylvania furnishing better than 50 and 65 per cent, respectively. The Southwest branch of the Pennsylvania averaged an even higher percentage on a smaller number of cars. Loads were moved promptly, yards being cleared and the present week-end clean-up finding conditions rather better than for many weeks.

Coke-car supply even exceeded coal several days of the week, the Monongahela Ry. averaging over 55 per cent, with 85 and 80 reached by the Southwest and Redstone branches, respectively. Some complaints regarding "dirty" coke shipments have been received, indicative of a gradual return to less fevered purchasing. It was reported that in some instances placements exceeded loading capacity.

With the approach of winter and the consequent shifting of labor always to be observed at this period, the manpower equation is looming up as a possible future controlling factor. Also so many thousands of coal and coke workers have left the region for foreign countries that further drain on its manpower would prove embarrassing.

No further drop in price quotations is regarded as likely, as the next month is believed to mark the beginning of a lessened car supply. River shipments of fuel this month will break all records, it is confidently believed, and coke production is soaring to the highest levels in months.

CONNELLSVILLE

Increase in Car Supplies Continues—Coal Much Lower—Coke Prices Yield Slightly—Production Increases 27 Per Cent in Two Weeks.

The increase in car placements at coke ovens continues. Production is something like 30 per cent above the previous average.

There has also been a better supply of cars for coal loading in the region and that, together with the order of the Baltimore & Ohio R.R. refusing to accept coal shipments east has caused a sharp decline in Connellsville coal, now quotable $6@$7. Thus the support of a high coal price is withdrawn from the coke market while at the same time coke supplies are increased.

Proportionately the production by furnace ovens has increased much more than the production by merchant ovens, and thus not much additional coke has been thrown on the market.

Off-grade coke has been most conspicuous in the market. For a time it was bringing nearly standard-grade prices, but in the past ten days it had to decline enough to bring out a demand. A large tonnage has been absorbed at about $16. We quote the spot market at $17.50 for furnace and at $19@$19.50 for foundry, per net ton at ovens.

The *Courier* reports production in the Connellsville and Lower Connellsville region in the week ended Aug. 14 at 219,440 tons, an increase of 25,300 tons in one week and an increase of 46,570 tons in two weeks.

Estimates of Production

FROM THE WEEKLY REPORT OF THE GEOLOGICAL SURVEY

BITUMINOUS COAL

	1920		1919(a)	
	Week	Calendar Year to Date	Week	Calendar Year to Date
July 31b	9,371,000	302,739,000	9,943,000	258,144,000
Daily average	1,562,000	1,676,000	1,657,000	1,429,000
August 7c	10,410,000	313,149,000	9,359,000	267,503,000
Daily average	1,735,000	1,678,000	1,560,000	1,434,000
August 14c	11,728,000	324,877,000	9,092,000	276,595,000
Daily average	1,955,000	1,687,000	1,515,000	1,436,000

ANTHRACITE

	1920		1919(a)	
	Week	Calendar Year to Date	Week	Calendar Year to Date
July 31	1,860,000	50,561,000	1,812,000	47,307,000
Aug. 7b	1,756,000	52,317,000	1,870,000	49,177,000
Aug. 14	1,801,000	54,117,000	1,640,000	50,817,000

BEEHIVE COKE

United States Total

Week Ended				
Aug. 14 1920c	Aug. 7 1920b	Aug. 16 1919	1920 to Date	1919 to Date (a)
417,000	382,000	387,000	13,210,000	11,966,000

(a) Less one day's production during New Year's week to equalize number of days covered for the two years. (b) Revised from last report. (c) Subject to revision.

NORTHERN PAN HANDLE

Local Mine Ratings are Increased from 35 to 60 Per Cent for Lakes Shipment—Cars Are More Plentiful — Demand Is Heavy and Prices Are Firm.

The Ore & Coal Exchange at Cleveland having increased the percentage of coal necessary to meet the requirements of the Lake situation, it became incumbent upon the mines in the Northern Pan Handle to consign more of their coal to Lake piers. Up until the second week of August, 35 per cent of mine rating had been the tonnage apportioned to Northern Pan Handle mines; now the percentage is 60.

Cars were more plentiful during the second week of August than in the previous period and yet little coal was available for commercial shipment, aside from the tonnage destined for the Lakes. Although congestion was evident in many quarters, the rail movement was good.

There was quite a heavy demand in all markets for northern Pan Handle coal, and coal prices had not receeded to any appreciable extent.

Eastern Ohio mines, in common with Northern Pan Handle mines, succeeded in forging ahead of the previous week in their output, although a car shortage was still such as to force idleness upon a good many operations and miners, and a growing congestion at certain Lake points threatened to eventually affect the car supply.

FAIRMONT

Local and Outside Causes Reduce Car Supplies in Northern Part of State—Congestion at Curtis Bay Embargoes That Port—Coal Sent to Tide Goes to New England—Lake Terminals Are Congested Due to Priority Order—Prices Fluctuate.

Production of coal in the Fairmont and other northern West Virginia regions, during the second week of August, suffered in comparison with the output of the previous week to a slump in the car supply. Some of the increase in equipment during the previous week had been as a result of the suspension of activities in Illinois and Indiana. A wreck on Aug. 9 interfered with the flow of cars from the West, cutting down the supply from that source temporarily.

The average number of cars furnished Monongah division mines on the Baltimore & Ohio was not over 900 cars during the greater part of the week. Mines, both on the Monongahela and on the Morgantown & Wheeling in the Scott's Run field, were without cars for commercial loading.

Cars had piled up to the extent of about 7,000, at the beginning of the second week of the month, at Curtis Bay and naturally that particular terminal was under embargo. No coal was being exported from any of the piers except Port Richmond, the only coal shipped through Curtis Bay being that destined for New England.

It was learned late in the week that a number of Lake terminals were becoming congested, that being particularly true as to the B. & O. pier at Lorain and the Hocking Valley piers at Toledo. When 4,000 cars a day reach the Lakes it is expected that there will be a most marked accumulation at such points.

During the second week of August, railroad-fuel loading was extremely heavy in northern West Virginia. Mines using assigned cars were being vouchsafed a 100 per cent car supply throughout the week.

Prices in northern West Virginia were fluctuating a good deal last week though there was little break in the market. However prices were most decidedly lower toward the end of the second week of the month than during the previous period. Indeed the recession on the thirteenth amounted to as much as $4 a ton. The fact that coal had become so plentiful at the Lakes and that exports were so limited had a decidedly softening effect on the market in northern West Virginia at least.

Middle Appalachian

POCAHONTAS AND TUG RIVER

Car Supplies Excellent But Labor Shortages Curtail Output—Priorities Absorb Majority of Tonnage—Unionization Grownig Unpopular Among Men.

With the Norfolk & Western R. R. furnishing a full car supply, labor shortage alone hampered production on that road for the week of Aug. 14. The strike of course made it difficult to produce coal in the Williamson field. A labor shortage was affecting production in the fields of McDowell and Mercer counties, a partial outgrowth of the strike, as it had been necessary to dispense with the services of a small percentage of miners who were bent upon forcing recognition of the union.

Pocahontas production slumped in the second week of August because of a continued labor shortage, though not to any appreciable extent. While for a time the weekly output of the Pocahontas region was maintained at 350,000 tons it is now about 60,000 tons short of maximum production.

A large share of the output of the Pocahontas region was divided between the Lakes and New England so that there was little free coal available. A small portion of the total output only was consigned to tidewater for export.

A total of 85,750 tons of coal were loaded in the Tug River field in the week ending Aug. 14, but operators said production should be higher in view of the good car supply maintained during the greater part of the week. There was probably less unrest among mine workers as a result of union agitation than during the few weeks preceding. There appears to be a growing sentiment among mine employees against the attempted unionization of Tug River and neighboring fields.

The Tug River field, in common with the Pocahontas field continued large shipments to Lambert's Point. It was reported that maximum tonnages were also shipped to Lakes.

LOGAN AND THACKER

Car Supply Causes Slump in Logan Output—Resumption of Work at 18 Thacker Mines Increases Production—High-Volatile Coal Is Embargoed to Tide—Demand Is Excellent.

While the car supply made no difference to mines in the Williamson high-volatile field it was responsible for a slump in production in the Logan field. A strike in the former region only prevented capacity production, but there was a growth in the outut of that field, showing a break in the ranks of strikers. The loss in the Logan region, however, more than offset the gain in the Williamson field.

Eighteen companies in the Thacker field, whose mines were forced to suspend operations because of the strike, were able to start the production of coal again at their plants. Resumption was made possible owing to the protection afforded the men from the roving band of strikers who have spent most of their time firing upon such plants as attempted to work.

Production in the area heretofore affected by the strike had been increased to about 100 cars of coal a day, exclusive of the Pond Creek section of the Williamson field.

There was a loss of 20,000 tons in the production of the Guyan field in the second week of August, the total output reaching 218,000 tons. A rather large tonnage was sent to the Lakes due to the fact that no Logan coal could be sent to tidewater owing to an embargo. There was still an excellent demand in all quarters and particularly for coal for export.

NORTHEAST KENTUCKY

Output Slumps Here in Second Week of August—Lake Shipments Decrease —Ban Is Placed on High Volatiles to Tide—Demand Is Slightly Lower on Industrial Fuel, with Prices a Little Softer.

There was a slump in the output of coal in the Northeast Kentucky field during the week ended Aug. 14. During the week ended Aug. 7 Big Sandy mines on the Chesapeake & Ohio had 1,630 cars while during the following week they only had 1,546. Conditions were similar on the Sandy Valley & Elkhorn R. R. On the Long Fork the supply also slumped.

As a result of the inferior car supply, production dropped from 58 to 54 per cent, only 132,000 tons out of a possible total of 244,000 tons being produced. Shipments, however, were much in excess of the corresponding period of a year ago, for at that time shopmen were on a strike.

Lake shipments were not quite so large as they had been during the week ended Aug. 7, only 555 cars being sent to the Lakes. While Tidewater tonnage had been running as high as 300 cars, no shipments to the seaboard were possible because of the Tidewater ban on high-volatile fuel.

While prices seemed to be a little softer than had been the case prior to the ban on exports in general, yet there had been no decided recession and there appeared to be little diminution in the demand for gas, byproduct and steam coals.

KANAWHA

Car Shortage Again Hampers Production—Little Free Coal Is Available—Export Demand Is Strong.

Production decreased materially in the second week of August. While at the beginning of the week mines on the Chesapeake & Ohio R.R. had a surplus of cars, by the end of the week there was only a 38 per cent supply available.

The supply for Kanawha mines on Monday, Aug. 9, was 112 per cent, there being 1,069 cars on hand on that date while Coal River mines had 440 cars, equal to 107 per cent.. On the same day, however, mines on the Kanawha & Michigan R.R. had only a 10 per cent supply.

Little coal from the Kanawha region was exported in the period ended Aug. 14, an embargo being in effect. There was a strong demand at export points, however, and prices offered were around $17 a ton. Heavy shipments both to New England and the Lakes were tending to curtail tonnage for contract customers.

NEW RIVER AND THE GULF

Car Supply Is Improved—Production Increases — New England Shipments Require Majority of Output — Prices Are Firm.

There was an increased production in both fields, yet the car supply is still short. The Virginian Ry. continued to excel the Chesapeake & Ohio R.R. in car supply.

The gain in production in the New River field amounted to a little over 13,000 tons, total loadings for the week amounting to 3,082 cars or about 154,200 tons. The week was ushered in with a supply of 1,069 cars, or more than 100 per cent.

The necessity of shipping so large a percentage of coal to tidewater for New England curtailed the volume of western and export shipments. There was no diminution in the price offered for export coal.

Production on a much larger scale marked the second week of August in the Winding Gulf region, due to an improvement in the car supply. The augmented supply was more perceptible on the C. & O. than on the Virginian, owing to the fact that the first named road had a very poor supply during the first week of the month. During the week following, however, empties were nearly twice as plentiful, the placements being about 60 per cent of allotment. Virginian Ry. mines had a 70 per cent supply, the car shortage alone affecting production. A large percentage of the tonnage produced in the Winding Gulf region was sent forward for New England delivery, some of the output, however going to Tidewater for export.

Southern Appalachian

ALABAMA

Operators Oppose Plan To Make Cordova Interchange Point for River Traffic—Mobile Coal Terminal Site Is Selected.

Strong opposition has developed to the plans of the St. Louis & San Francisco R.R. to make its station at Cordova the point of interchange for river traffic using the Warrior River, instead of the interchange being made at the Port of Cordova as has been the custom since the beginning of traffic at the latter point. The matter has been taken up with the Alabama Public Utility Commission and the case will be appealed to the Interstate Commerce Commission if the desired results are not obtained from the state body. The switching charges incident to the proposed change would largely absorb the 20 per cent differential between the all-rail and rail and water rates afforded to competitive points by use of the river and would strike a serious blow at the movement of coal via this route.

Theodore Brent, manager of the Mississippi-Warrior Rivers Waterways, H. T. Debardeleben, manager of the Warrior River division, J. D. Cutter of the Inland Waterways department, together with Army and Navy officials, met in Mobile recently and selected a site for the coal terminals which the Government will construct at that point at a cost of $400,000. The cost of the site will be provided for by the city of Mobile, the funds for its purchase having practically been subscribed. Storage capacity will be provided for 40,000 tons of coal and 20,000 tons of ore, with all necessary handling equipment to enable the prompt loading and unloading of cars and bunkering of ships.

Western

OKLAHOMA

New Companies Open Up Mines in the Pittsburg District After Three Years Little Development.

Coal activities in Pittsburg County are being resumed after a period of about three years during which time no new mines were opened with the exception of a few small operations. Two mines are being put down in a new area of development two miles north of Savanna. A big opening at Lehigh in the property of the Fulsom-Morris company also is expected to add prosperity to the district.

One of the new projects near Savanna, which is being developed by the McAlpine-Cobb Co., a new firm, is expected within the next three months to be producing approximately 100 tons daily. The mine is the first operation of the new company on a tract of 877 acres. George C. McAlpine, superintendent of the mines of the Southern Fuel Co. at Brewer, and Earl Cobb, coal operator of Amarillo, Texas, are the owners. The second mine in the district is being put down on an adjoining tract under the direction of Dan McAlpine of Haileyville.

The McAlpine-Cobb Co. mine now is down about 400 ft. and has almost reached coal.

WASHINGTON

Seattle Organization Enters Pleas for Development of Alaska's Coal Beds.

As shown by the reports of several New England states, Alaska can mine enough fuel to supply all Pacific Coast demands and thereby assure the East the full output of the Eastern, Southern and Middle West fields, if the government will allow the development of the Alaskan coal beds, according to the Alaska Bureau of the Seattle Chamber of Commerce, in their plea for prompt development of Alaska's coal fields.

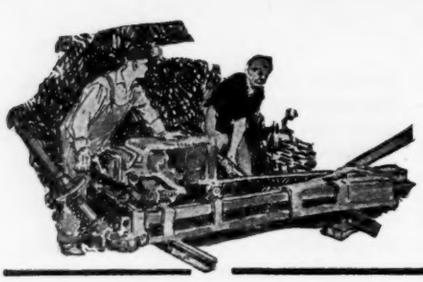
The situation in Alaska never has been understood in the East. Today, as a result of unwise laws, restrictions and handicaps, Alaska is tied up and its resources are not available. Alaska is importing coal from British Columbia when she should be exporting coal. Yet Alaska, with the New England states crying for coal, could supply enough fuel for all Pacific Coast demands and thereby assure to the Atlantic Coast the full output of its own mines.

UTAH

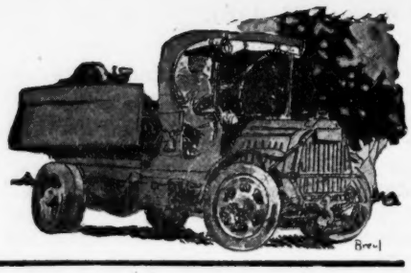
Modern Methods Will Be Used in Coalville and Grass Creek Districts—State Output May Be a Record for 1920—Leases Are Issued in Carbon County by the State—Price of Coal Will Be Advanced.

Preparations are under way for a busy season in Summit County coal mines in the Coalville and Grass Creek districts, according to William Peterson, State Geologist, who has just returned from a trip to that section of the state. Mr. Peterson says there is a good block of coal there 10 ft. thick and adds that the operators are preparing to install more modern methods of getting it to the surface.

Leases on state lands for the purpose of developing them for coal and oil have been issued by the State Land Board to Leon F. Rains, of Salt Lake City, covering 1280 acres in Carbon County. The leases provide for an annual rental of $1 per acre and a royalty of 10c. per ton on all coal mined. Operations will begin within five years from July 7 last.



Mine and Company News



ALABAMA

Montgomery—Bloodhounds from the state penitentiary were sent to Boothton, Shelby County, to assist in tracing the assassin of Chief Engineer Comer of the Southern Coal and Coke Company's properties there. Mr. Comer while standing on the pumphouse at the mine was shot in the back reports stated. Death was almost instantaneous.

ILLINOIS

Carlinville—The Carlinville mine has been leased to a local corporation with Harry Bartels at the head. Mr. Bartels has had considerable training in the operation of a mine, his father, W. G. Bartels, having been for years the manager of the Carlinville plant which is now the property of the Standard Oil Company. A number of prominent Carlinville men are associated with Mr. Bartels and a thoroughly equipped and efficiently operated mine will be the result of their labors.

INDIANA

Sullivan—Articles of incorporation have been filed by the Templeton Coal Co., Sullivan, Ind., with a capital stock of $400,000. The company will do a general mining business. The directors are John A. Templeton, Phil H. Penna, secretary of the Indiana Bituminous Coal Operators' Association, and Charles N. Templeton.

MARYLAND

Cumberland—Shipment of coal by the Tunnelton-Freeport Coal Co. will begin this week. The development operations of this company are the most extensive in this section and when completed, about Sept. 15, will consist of a mile of standard gage railroad, 700 feet of tramroad, tipple and storage bins, two mine openings and all accessories.

OHIO

Youngstown—Added development of its coal stripping operations in Columbiana county has resulted in application to the secretary of state by Miller Bros. Coal Co., for permission to increase its capital stock from $30,000 to $150,000.

Columbus—The Gnaden-Goshen Coal Co., with offices in the Citizens Trust & Savings Bldg., is issuing $200,000 stock which has been placed on the market through the Lincoln Branch of the Citizens Trust & Savings Co. G. L. Stephan is president; Fred Anthony, vice-president and W. J. Eckart, secretary-treasurer of the company.

The Pomeroy & Hocking Mining Co. has been chartered with a capital of $250,000 to operate a mining company. The property is located in Pomeroy Bend field.

The Aberdeen Coal Co., chartered with a capital of $25,000 will take over a tract of 320 acres of coal lands on the T. & O. C. Ry. in Perry County. The incorporators are H. H. Orr, J. W. Bricker, R. G. Martin, F. Falk and D. N. Postlewaite.

Jacksonville—The Northern & Southern Fuel Co., of Columbus has consolidated the holdings of the Northern Coal Co., and the Southern Fuel Co., both of which were formerly controlled by C. C. Sharp of Nelsonville. Offices of the company are in Columbus and the output of the mines, about 1,500 tons daily, will be sold through the Central West Coal and Lumber Co.

PENNSYLVANIA

Uniontown—The Whiteley Coal Co. has purchased the coal underlying the following farms in Franklin Township; Inghram Cummins farm, containing 133 acres and 22 perches; consideration $37,944.19. Thomas H. Montgomery, two tracts, containing 115 acres and 56 perches and 100 acres and 38 perches, respectively; consideration $61,383.66. Alcinda Wood farm, containing 100 acres and 38 perches; consideration $28,567.89.

On September 11 at 2 p.m. at the court house in this city the holdings of Wm. M. Thompson, consisting of ⅛ of a 640-acre tract of coal-bearing land in Springhill Township, Fayette County, Pa., will be offered for sale. Part of the property is on lease to several small companies and the balance is virgin coal land.

Brownsville—The Crystal plant of the Hecla Coal & Coke Co., seriously damaged by a recent fire, resumed operations a few days ago, using a temporary frame tipple. A steel tipple and bin is in prospect.

Johnstown—A million dollar coal deal, one of the largest consummated in the Johnstown district, has been closed whereby the Robindale coal plant, including the mining village of Robindale, a short distance below Seward, is transferred from the Conemaugh Smokeless Coal Co. to H. D. Waldbridge & Co., of New York, for the Penn Public Service Corporation, which is controlled by the purchasing company.

The purchase includes the entire holdings of the Conemaugh Smokeless Coal Co., including 1,800 acres of coal, more than 100 acres of surface, a modern mine and a mining village of nearly two score of houses. The coal is what is known to coal trade as the "B," or "Miller," seam.

TEXAS

Eagle Pass—The International Coal Co. is spending about $200,000 in improvements on its property two miles north of this place in Maverick County. A new shaft is being sunk, and a spur is being built from the Southern Pacific Ry. branch connecting Spofford and Eagle Pass. The company is now under the management of Dr. R. R. James and D. H. Echols, formerly of Cotton Plant, Ark.

UTAH

Salt Lake City—Articles of incorporation have been filed with the office of the secretary of state by the Sims Coal Co. of Idaho Falls. The company is organized with a capital stock of $20,000. A. S. Sims of Idaho Falls is president and general manager and J. V. Sims is the secretary and treasurer of the company.

WEST VIRGINIA

Huntington—The Logan-Elkhorn Coal Corporation is planning for the development of coal properties in the vicinity of Fleming, Ky. It is planned to install equipment to allow for a maximum of 1,000 tons capacity. The company recently increased its capital from $200,000 to $500,000 for expansion. A. B. Ewen is general manager.

Bridgeport—The Purseglove - Maher Coal Co., operating in the eastern Ohio district, has arranged for a change in company name to the Maher Collieries Co. The Purseglove holdings in the organization were recently acquired by the Maher interests.

Bower—The Copen Gas Coal Mines Co., recently organized, with a capital of $2,000,000, is planning the development of about 1,000 acres of coal property. A large mining plant will be installed. The company is headed by Jeremiah J. Kelly, C. W. Flesher and John Clifford, Bower.

Clarksburg—The Dixie Mining Co. is planning for the installation of a new plant with daily capacity of about 300 tons of coal on its property in this section. The company has a site totalling about 250 acres.

Charleston—The Indian Run Collieries Co., recently incorporated with a capital of $1,000,000, will operate large coal properties in this section. The company is headed by W. E. Wright, T. B. Price and D. W. Hills.

Bluefield—Fire completely destroyed the foundry, machine shop and carpenter shop of the Virginian Iron Coal & Coke Co. at Toms Creek, Va., on June 23, the loss entailed amounting to $100,000. The fire had its origin in the foundry, quickly spreading to other buildings.

Fairmont—The Fairmont & Cleveland Coal Co., of this place, is arranging for the installation of additional machinery at its properties to increase the capacity from 1,500 to 3,500 tons per day. The company recently increased its capital from $600,000 to $1,250,000 for expansion.

A large tract of coal land in Harrison County comprising about 178,238 acres, was purchased by the Consolidation Coal Co., from the Monongah Coal Co., it was announced early in August, for the sum, it is understood of about $177,433.82.

Moundsville—Production has been begun at the new mine of the Woodland Coal Co. at Whittaker, W. Va. near here, the company having found it necessary to sink a shaft to the depth of 185 feet. It will be possible to produce about 2,500 tons a day when full production is reached, the company having a tract of about 3,000 acres in which to operate. However before production is begun on a large scale, it will be necessary to erect a tipple and to build a power house. The tipple will be of steel construction and will be sided with asbestos.

Fayetteville—The three Boone brothers, who have been operating smokeless mines in Fayette County for fully a quarter of a century, are said to have closed out their operations on Keeney's Creek. It is also being reported that the operations at Lookout, Blume and Michigan were sold to the Archibald McNeil Sons Co. of Bridgeport, Conn., who are engaged in the export business. It is understood that the sale became effective on August 1. It has only been a short time since the same Bridgeport interests acquired four operations on Piney Creek near Beckley. The Boone brothers still own a considerable acreage in Fayette County which they may later decide to develop.

WYOMING

Rock Springs—General Manager E. S. Brooks of the Union Pacific Coal company has received official notice from President E. E. Cavin, that an appropriation of $160,000 had been made to take care of the housing problem for the official employees of the company in Rock Springs.

According to the plans now drawn, the center of the plot will be taken up with a large park, which will be in charge of a caretaker at all times. Surrounding this park will be the dwellings, club house, etc., as designated under the appropriation.

The appropriation calls for the erection of eighteen new and modern homes of from six to eight rooms, to be completed before winter.

CANADA

Lampman, Sask.—Coal mining operations will be commenced at the new coal field near Lampman, Saskatchewan, Canada, within the next sixty days. This field is being developed by the Farmers Coal Mining Co. Ltd. The shaft already has been sunk to a depth of 170 feet and the coal bed lies at a depth of 210 feet. When fully developed the mine will have a capacity of 1,000 tons a day. This will take some time, however, as it will be necessary to do a large amount of work before maximum capacity can be reached.

Victoria, B. C.—Coal production returns for the month of July, as far as are available, indicate that the collieries of British Columbia apparently are satisfactorily meeting recent heavier demands of the trade. The figures follow:

	Tons
Nicola-Princeton Field	
Middlesboro Collieries Co., Middlesboro	6,918
Fleming Coal Company, Merritt	2,626
Coalmont Collieries Co., Coalmont	1,984
Vancouver Island Field	
Canadian Western Fuel Co., Nanaimo	55,399
Canadian Collieries Ltd., Comox	41,089
Canadian Collieries Ltd., So. Wellington	8,904
Canadian Collieries Ltd., Extension	15,342
Pacific Coast Coal Mines, So. Wellington	7,680
Nanoose-Wellington Coal Co., Wellington	3,079
Granby Cons. M. S. & P. Co., Cassidy	9,019

Rate News

I. C. C. Decision—Ex Parte 74. In the matter of applications of carriers in official Southern and Western classification territories for authority to increase rates. Supplemental Order 1, Aug. 11.

It is ordered that in the application of the increases authorized in the report in this proceeding entered July 29, 1920, points in Illinois territory should be considered to be within the eastern group for the purpose of applying the increases on interstate traffic between points within Illinois territory; also on traffic between points in Illinois territory on the one hand and points in official classification territory east of the Indiana-Illinois state line on the other, and that an increase of 40 per cent may be made in such rates; and points within said Illinois territory should be treated as being in the western group on traffic subject to joint or single line through rates between points in said territory on the one hand, and points lying within the boundaries of the western group (west or north of Illinois territory) on the other, and that an increase of 35 per cent may be made in such rates.

For the purposes of this order Illinois territory is defined as consisting of all points in the state of Illinois, also points in Wisconsin on and south of the C. M. & St. P. Ry., Milwaukee to Madison, the C. & N. W. Ry., Madison to Dodgeville, and on and east of the Illinois Central, Dodgeville to the Illinois state line; also points on the west bank of the Mississippi River to which joint through rates, subject to the official classification, are now in effect from points in trunk-line and central territories.

Indiana—At a meeting of the directors of the Anderson Chamber of Commerce a committee was appointed to meet with similar committees of other Chambers of Commerce in Central Indiana, for the purpose of formulating a petition to the Indiana Public Service Commission for a revision of the coal freight rates from Indiana mines to the former Indiana natural gas belt. It is alleged that there is discrimination between the coal rate to Indianapolis and the rate to Anderson, Richmond, Newcastle, Muncie, Kokomo, Marion and several smaller cities and towns. It is said that the rate from the mines to Indianapolis has been 90c., and to the old gas belt counties the rate is $1.15. Manufacturers and operators of public utilities are making the principal complaints.

I. C. C. Decision—Investigation and Suspension Docket 1,173, Aug. 10.

Proposed cancellation by the Chesapeake & Ohio Railway Company of a charge of $5 per car for switching coal, loaded in cars furnished by the Carolina, Clinchfield & Ohio Railway, from the mine tipples of the Federal Coal Company and the Elkhorn City Coal Company, at Elkhorn City, Ky., to the connection tracks with the Carolina, Clinchfield & Ohio Railway at Elkhorn City, when destined beyond, found not justified and schedules under suspension ordered canceled.

Personals

F. R. Wadleigh has succeeded J. H. Davison as manager of export sales for Weston Dodson & Co. and will make his headquarters in New York City.

C. P. Ware, formerly with the Middle West Coal Co., has joined the sales force of the Emmons Coal Mining Co. at the Cincinnati office.

Philip A. Castner has resigned as secretary of Castner, Curran & Bullitt, of New York City, and George Derbyshire has been elected to fill the office.

Abel Mishler has been appointed as manager of Coale & Co., New York City, and his position as manager of domestic sales will be filled by L. A. Robinson, a member of the company's sales staff.

J. W. D. Moodie, for many years general manager of the Britannia (B. C.) mines, has resigned and will be succeeded on Aug. 1 by B. B. Nieding, a mining man now living in the state of Washington.

Frank T. Powers, of Frostburg, Md., has been appointed by Gov. Ritchie mine inspector for Allegany and Garrett Counties, succeeding Lawrence Dunn, Midland. Mr. Powers previously occupied this position until he entered the U. S. Army during the war period.

W. E. Brandt, formerly with the Rutledge & Taylor Coal Co. and the Thompson Coal Co., both of Chicago, and later identified with the Fuel Administration, has recently been elected president of the newly organized Lafayette Coal Co., 609 Old Colony Bldg., Chicago.

M. A. Rowan, formerly of the Johnston City Coal Co., of Chicago, has established headquarters at Herrin, Ill., as practitioner of consulting safety engineer on mining problems.

Industrial News

Cleveland, O.—The National Sales & Trading Co. has established a coal and coke department in Philadelphia at its offices in the Finance Building. This department is under the supervision of Vernon B. Bickmore.

Boston, Mass.—The Somerville Coal Co. is adding to its storage space and making other noticeable improvements in its plant, the only one having a waterfront in this city of 100,000 people, situated on the Mystic River, three miles from the Boston State House.

Indianapolis, Ind.—The Ft. Dearborn Coal Co. is now opening a new office at Indianapolis, which will be in charge of W. R. Garstein, of that city. The new office of the company at Charleston will be in charge of G. E. Merriman.

Huntington, W. Va.—The Main Island Creek Coal Co. has opened an office in Huntington, W. Va., with G. M. Angell, sales manager, in charge.

Charleston, W. Va.—The Central Fuel Co., of this city has opened an office in the Kanawha Banking & Trust Building at Charleston, W. Va., with E. T. Donnelly in charge.

Philadelphia, Pa.—All the city pumping stations at Philadelphia are to be equipped to burn anthracite steam sizes. At present about one-half of them use bituminous.

Pittsburgh, Pa.—The Coal Mine Department of the Ætna Life Insurance Co. has been established in the Chamber of Commerce Building under the direction of Sim C. Reynolds, Chief Mine Inspector for the company. Mine inspection work for Pennsylvania and other coal mining states is to be carried on from this office. The following inspectors have been assigned to duty up to the present time: Clarence B. Nairn, for southern Illinois and Indiana; C. W. Hall and Wm. Elkins, for the bituminous district of Pennsylvania; James Weston, for the anthracite field; other inspectors are to be engaged for other fields.

New York, N. Y.—The export department of the Oxweld Acetylene Co., which was formerly located at the company's factory in Newark, N. J., has been removed to the Carbide and Carbon Building, 30 East 42d St., New York City. The department has been reorganized and is now under the direction of R. G. Noble, who will co-operate with the general sales department of the company.

New York, N. Y.—The International Fuel & Iron Corp. has moved its New York office from the Marbridge Building to the Trinity Building at 111 Broadway, where increased floor space, made necessary by the company's rapidly increasing business, adds materially to its efficiency.

Reading, Pa.—Willson Goggles, Inc., announce their purchase of all patents, trade marks, machinery and good will of Walter Soderling, Inc., makers of "Dustite" Respirators. Hereafter "Dustite" Respirators will be made at the Willson factory under personal supervision of Mr. Soderling.

Columbus, O.—The contract for supplying a coal crusher to the Scioto River pumping station of the Columbus Waterworks Department has been awarded to the Jeffrey Manufacturing Co. at $2,020. This was the only bid on hand at date for opening. The crusher will be delivered within two months.

Obituary

Jesse Nigh, father of B. F. Nigh, secretary of the Michigan-Ohio-Indiana Coal Association, died at his home in Circleville recently at the age of 72 years. He was formerly a resident of Columbus, Ohio.

Michael D. Barnitz, York, Pa. Aged 81 years. Retail coal merchant. Head of the coal business operated under the name of Geo. W. Barnitz Estate.

H. S. Evans, Chicago, Ill. Member of the firm of Evans Bros., retail coal merchants.

Henry Hazenwinkle, Bloomington, Ill. Aged 78 years. Well-known retired retail coal and grain merchant. Founder and president of the Hazenwinkle Grain Co., operating a line of elevators and coal yards.

Lauren Hilligoss, Shelbyville, Ind. Aged 55 years. Well-known retail coal merchant. Member of the firm of George W. Hilligoss & Son.

John Parkinson, Brooklyn, N. Y. President and founder of the Parkinson Coal & Coke Co., retail coal merchant.

Herbert G. Streat, New York, N. Y. Retail coal merchant; president of the Streat Coal Co.

Dr. D. H. Thomas, Columbus, O. Aged 52 years. Well-known pioneer coal operator. He was secretary and treasurer of the Mill Creek Coal & Coke Co. of Coopers, W. Va.; secretary of the Thomas Coal Coal of Thomas, W. V., and a director of the Flat Top Fuel Co. of Bluefield, W. Va. He was also identified with other enterprises.

Association Activities

Pennsylvania Wagon Coal Shippers' Association

At a meeting held at the Ft. Stanwix Hotel, Johnstown, the association was formed by representatives of 18 companies operating in Indiana, Somerset, Westmoreland and Cambria Counties. Officers chosen are: President, Chas. W. Hammond; vice-president, M. C. Stewart; secretary, E. S. Bowden; treasurer, J. W. Rankin. The executive committee is comprised of the officers and J. L. Campbell, Harry Mainhart and M. F. Watters. Chief aim of the organization is to secure adequate car supplies from railroads.

Independent Coal Operators' Association

Second meeting of the association was held with 40 operators attending. A permanent organization was formed with M. F. Watters, president, and Jos. Gray, secretary. A committeee on grievances was formed, consisting of the following: P. M. Swope, J. W. Yeadlen, F. C. Lantzy, C. L. Bearer and E. P. Reed. Dr. J. Maucher and Secretary Gray were named a committee on by-laws. Meetings will be held on first and third Wednesdays of the month.

Oklahoma Coal Operators' Association

The Oklahoma Coal Operators' Association, in a meeting at McAlester, voted to hold coal miners to their contract entered into at the end of the national strike last November. The operators decided that the contract entered into at that time is valid and binding for a period of two years from that date, and that its terms should be enforced without further negotiations. The stand of the operators was made known in response to a request by John Wilkinson, president of District 21, United Mine Workers of America, asking what stand the Oklahoma operators would take on the question.

Pittsburgh Coal Operators' Association

The Pittsburgh Coal Operators' Association of Western Pennsylvania submitted a recent protest to the Interstate Commerce Commission, the State Public Service Commission and head officials of railroads serving the Pittsburgh area alleging preferred car placements at wagon mines, team track loaders and other small operations.

In brief, the protest covers the four following points:

That railroad officials and employees are buying coal from operations of the classes mentioned, selling the coal at a profit to themselves, and in return for this privilege are furnishing these operations cars in excess of the number to which they are properly entitled.

That railroad employees are accepting money payments for cars furnished to operations of the classes mentioned in excess of the number to which they are properly entitled.

That by the failure of railroad employees to make proper reports cars placed empty at operations of the classes mentioned and hauled to the scales loaded do not appear upon the percentage sheets.

Many operations of the classes mentioned are being allowed regular daily car supply on the theory that they are on construction basis, this long after the construction work is completed.

Railroad officials have promised Commissioner Gardiner of the Association that a searching investigation would be made immediately.

Tri-County Motor Mines Association

The order of the Public Service Commission denying cars to so-called team track operators frames the issue for which the Tri-County Motor Mines' Association is being formed by small operators from Fayette, Westmoreland and Washington Counties.

A preliminary meeting was recently held and the organization will be finally perfected at an early meeting in the Municipal Building. The fact that the Public Service Commission has taken official action against their industry is expected to result in virtually every operator of the district being present inasmuch as the association is being organized to fight just such an official action.

The Public Service Commission order relieves the railroads of responsibility in denying cars to team track operators. As reported at the meetings, there was nothing of greater force than an order by the railroads denying open-top cars to team track operators. It was said that the railroad order was not being enforced uniformly, mines on one branch being supplied with cars while those on another were denied them.

Panhandle Coal Producers' Association

Organization of the Panhandle Coal Producers' Association, composed of operators of the Panhandle district, was effected at a recent meeting in the First National Bank Building, Pittsburgh.

Members of the new organization will retain their memberships in the Pittsburgh Coal Producers' Association, according to a statement by J. H. Sanford, vice-president of the Carnegie Coal Co., who is a member of the executive committee named to bring about organization of the Panhandle association.

"It is the purpose of the new association to deal with the question of car shortage at our mines along the Panhandle, a situation for which various reasons the Pittsburgh association has been unable to alleviate, and as far as I know the Panhandle operators will remain indentified with the Pittsburgh Producers' Association," Mr. Sanford said. "There may be some, of course, who will withdraw, but we have many common interests with the Pittsburgh body."

In confirming the report the new organization was to be formed, Mr. Sanford said the Pennsylvania Railroad had failed to furnish 50 per cent of actual number of cars needed as provided in a recent ruling, but had been giving the Panhandle mines only 30 per cent.

Other Panhandle operators indentified with the Panhandle association are William Taylor, of the Cleveland and Western Co., chairman of temporary organization committee; A. M. Marion, Chartiers Creek Co., and B. H. Cannon, McClain Mining Co., as committee members. Twenty-five out of thirty-five Panhandle operators were expected to attend the meeting.

Northern West Virginia Operators' Association

Operators of northern West Virginia, at a meeting of the Northern West Virginia Coal Operators' Association, held at Fairmont, took appropriate action toward securing the co-operation of members in making Service Orders 10 and 11 effective by adopting a resolution pledging the support of the association in carrying out the provisions of the orders referred to. Operators show no disposition to combat the two orders, but an entire willingness to co-operate. Provisions of the Lake and New England priority orders were fully explained by G. T. Bell, vice-president of the association; C. H. Jenkins, a director of the National Association, and J. M. Orr, a director of the association.

The Northern West Virginia Coal Operators' Association continues to grow in size, there being at the end of July 160 different coal companies on its roll. The 160 companies represented in the membership of the organization operate about 250 mines. While the association had quite a large membership on January 1, there have been 39 companies added to the membership list since that time, the largest growth in any one month being 20 members added for July. The association has proved to be most beneficial to coal people and has so completely demonstrated its usefulness that many new members have been attracted.

Coming Meetings

American Mining Congress will hold its annual meeting at Denver, Col., Nov. 15. Secretary, J. F. Callbreath, Munsey Building, Washington, D. C.

New York State Coal Merchants' Association will hold its annual meeting Sept. 9, 10 and 11 at Richfield Springs, N. Y. Treasurer, G. W. F. Woodside, Albany, N. Y.

The Rocky Mountain Coal Mining Institute, in conjunction with the Colorado Metal Mining Association, the local chapters of the American Mining Congress and the American Institute of Mining & Metallurgical Engineers, and the International First Aid Meet will hold its annual meeting Sept. 9, 10 and 11 at Denver, Col. Secretary, F. W. Whiteside, Denver, Col.

National Safety Council will hold its 1920 congress on Sept. 27 to Oct. 1, inclusive, at Milwaukee, Wis. General Manager, C. W. Price, Chicago, Ill.

Oklahoma Coal Operators' Association will hold its annual meeting Sept. 14, at McAlester, Okla. Secretary, F. F. LaGrave. McAlester, Okla.